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Original Articles.

THE DIETETICS OF ATONIC DILATATION OF THE STOMACH

BASED ON A STUDY OF THE PHYSIOLOGY OF GASTRIC MOVEMENTS.*

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Food taken into the stomach is subjected to certain mechanical and physical forces derived from the energy of muscle contraction. The gastric movements result in a minute subdivision and final ejection of the stomach contents into the duodenum. Failure of the stomach to triturate and mix the food may be compensated for by chemical and other means, but if the expulsion of the contents is not accomplished, a most serious condition results that is paramount to every other consideration.

MUSCLE TONE.

The characteristics of unstriated muscle, of which gastric muscle is composed, present the phenomena of a peculiar functional activity called tone. Tone differs from the peristaltic or contraction waves, in that there is a condition of continued contraction or shortening which persists, more or less constantly, decreased or increased by varying conditions. The relation between the condition of muscle tone and changes occurring in ordinary contraction, such as peristaltic waves, is not yet thoroughly understood. The continued shortening or tone of unstriated muscle is considered to be under the control of the nerves. In animals, muscles, such as those of the claw of the crayfish, and the heart of the helix, possess the tonus independent of the nervous system. (Petrowsky.)

By the term tone or tonus we refer specifically to muscle tone, by which is meant that the muscle remains permanently short. The elongation or lax state of the stomach muscle allows a condition of what is termed clinically dilatation—lengthening of the muscle fibers. The function of peristaltic motion of the stomach is so inseparable from the phenomena of tonus of gastric muscle that the two conditions are usually considered together. Clinically, it is difficult to separate these factors until more definite physiologic relations are known. We have an example of two functions in the stomach during digestion, whereby we may observe with the *x*-ray the quiescent, tonic state of the cardiac portion, and the active peristaltic contraction of the pyloric end of the stomach, as shown by Cannon.[1]

THE CAUSE OF GASTRIC MOVEMENTS.

The stomach muscles are shaped into a subspherical hollow organ, which, during rhythmical contractions (peristaltic), materially alters its shape. The pyloric end (antrum pylori) approaches the cylindrical form during peristalsis, while the cardiac end retains more of its spherical form in a state of tonic contraction, giving the stomach a gourd-like appearance.

It was formerly thought (Beaumont and Brinton) that the entire organ was excited into a series of contractions during the digestive process, but it has been shown by numerous observers that only the pyloric end shows peristaltic action, while the cardiac end remains in a tonic and quiescent state. (Cannon, Hofmeister and Schutz, Moritz, von Mehring, Roesbach.[2])

To determine the results of the chemical action of food on gastric movements and those produced by different forms of mechanical stimulation, the author carried out a series of experiments on dogs, as well as on the human subject. As shown by the protocols at the end of this article, strong HCl, peptones, albumoses, starch, etc., showed no appreciable effect on the movements produced by these substances applied to the mucous membrane, while distention with air or water immediately excited increased peristalsis. If the air or water was under control, by forcing it into a bag within the stomach, so that all the air or water would return promptly, the resultant contractions were more numerous and vigorous. When vibratory exercise was used, the contractions were increased in proportion as the tension was increased. It would appear that tension is one of the most important factors in peristalsis of the stomach. The mechanical and physical factors become of greater importance in dietetics than the chemical action of food, especially in conditions of atony and diminished muscle contractions.

It was claimed by Brücke, chiefly on theoretic grounds, that the cause of the increased vigor and number of contractions at the end of the digestive process was due to the HCl, and this is taught by most physiologists to this day. But Hirsch[3] shows that water solutions of acid or alkalies pass out of the stomach independently of the reaction of the stomach contents.

Moritz[4] found the chemical substance of food has some effect on the time-expulsion of the contents. If

* Read in a symposium on dietetics before the Chicago Medical Society, Jan. 30, 1904. This symposium was reported in THE JOURNAL, Jan. 30, 1904, p. 329.

1. Cannon: Am. Jour. Physiol., 1898, vol. i; 1902, vol. ix, No. 6.

2. Since writing this article I note that Lommel (Münchener medicinische Wochenschrift, 1903, L, No. 38) reports some recent observations of gastric movements in dogs similar to those made by Cannon. After feeding the trained dogs with chopped meat mixed with bismuth, rhythmical movements could be seen by the aid of the *x*-ray in two to six minutes, starting from the greater curvature; within five minutes the entire stomach took part. He shows, as Cannon reported, that psychic emotions influence the gastric movements.

3. Hirsch: Centralbl. f. klin. Med., 1893, No. 4, 16.

4. Verhandl. deutsch. Naturforscher und Aerzte, Vienna, 1894.

very acid or alkaline, the contents remained longer.[5] Pawlow[6] has shown that when the acid-gastric contents reach the duodenum they cause by reflex action, a temporary closure of the pylorus.

Chemical stimulation (alkaline or acid) may cause opening or closing of the pyloric orifice, as clinical experience indicates. The mechanical effects of tension on the muscle walls producing stomach movements seem most important.

MOVEMENTS OF ALL HOLLOW VISCERA THE RESULT OF TENSION.

In the observations that we make of the movements of other hollow muscle viscera, we note that similar factors enter into the causation of peristaltic contractions. According to Goltz,[7] the expulsion of urine is caused by the rise of pressure in the bladder; with increasing tension the contractions increase. It has been shown by von Zeissl[8] that with increasing fluid causing increasing tension, which in turn augments the force of each contraction, the pressure within the bladder is raised high enough to overcome the sphincter, and cause expulsion of the urine. Von Zeissl found that micturition occurred normally even after all nerve supply had been cut off from the bladder. The heart of a snail or the apex of a frog's heart, which is devoid of nervous ganglia, will contract rhythmically on distention with air or fluid.

THE UNIVERSAL STIMULANT OF PROTOPLASMIC MOTION.

Tension in one form or another appears to be the universal stimulant of protoplasmic motion. As Matthews and Whitcher[9] have shown in their experiments on the "Importance of Mechanical Shock in Protoplasmic Activity," however various the mechanical stimuli may be in influencing protoplasmic activity, they produce their effect by altering the state of the protoplasm. This change in state, however, is followed by definite metabolic structural changes, which must be sufficiently abrupt to excite activity. Meltzer[10] makes the unique suggestion: "But why not also assume that the great motility of the sperm is in every case an adequate mechanical shock appropriate to start the normal cycle of cleavage just as we see that a simple mechanical shock may be the means of setting up an artificial segmentation of the eggs of starfish."

The fundamental principles on which tension rests in the contraction of muscle have been carefully worked out by Gad, Kaiser v. Kries, and Schenck,[11] which show that the stimulus to muscle contraction is supplemented or re-enforced by second and repeated stimulation having its source in the tension which the resistance produces. Thus, as the muscle contracts against the load, it gathers energy from the resistance it meets. The resistance to motor power is of equal importance for the resulting movement and work.

Experimentally, we know that if a load is added to a muscle, the amount of work it can then accomplish, within certain limits, is enormously increased. Without a load, no work can be accomplished, though energy may be expended. By adding 30 grams of weight to a prepared muscle, the work accomplished leaps to 330 grammillimeters of work. Tension (lateral pressure) on the stomach wall excites the muscle to tonic contractions, and as the load decreases by the escape of the fluid portion of the stomach contents, it causes a marked increase in the force and number of the resulting contractions, which are observed at the end of the digestive period. The effect of tension under similar conditions is seen in the laboratory. When a muscle is connected with a strong spring or weight too heavy to lift, the muscle will contract without shortening. There will be energy expended, but no work accomplished. This is when muscle is stimulated under what is known as isometric conditions. If now the load be reduced so that the muscle can contract with shortening the resulting contractions show greater vigor and accomplish more work than the same muscle would if it had not previously met with a higher degree of resistance. The experiments recorded at the end of this report show that tension produced by stretching the gastric muscle by inflating the stomach with air causes a prompt response, and more powerful contractions follow when such stretching by inflation is increased.

An important difference between striated (voluntary) and unstriated (involuntary) muscle, as Fick has shown, is that the striated or voluntary muscle requires a comparatively slight degree of stimulation and of short duration, while the unstriated, such as stomach muscle, requires a much more powerful and longer duration of the stimulus to gain the greatest advantage. The resistance of the load to muscle contraction excites the liberation of energy, which, as we have seen, is necessary to accomplish work, but the duration of such stimulus must be of sufficient length of time to obtain the highest degree of contractions or peristaltic waves. In exhaustion, fatigue and atony, the same law exists, except that it requires within limits increased stimulation, and following the period of work a much longer period of rest must be allowed for recovery than under normal conditions.

THE RÔLE OF THE NERVOUS SYSTEM.

The question of the relation of the nervous system to the gastric movements has been the subject of a large amount of experimental investigation. Openchowski[12] looked on the nervous ganglion in the walls of the stomach as centers for the co-ordination of movements. The vagus has been looked on as the motor nerve of the stomach, and such observers as Longet, Goltz, Bram, Houckgeest, Openchowski and Morat have shown that movements occur after excitation of the cut ends of the vagus, but von Bram, Houckgeest and Morat observed such movements were dependent chiefly on the stomach being in a state of digestion. Langly[13] obtained variable results after the administration of curare and atropin.

Hlasko[14] endeavored to locate the cranial center for the movements of the stomach, and concluded that

5. Since writing this article I note that Meyer, working in Professor von Mering's clinic (Meyer: Ist die Entherung des Magens abhängig von dem Grad der Säurebildung? Archiv f. Verdauungskrankheiten, vol. ix, No. 6, 1903), presents experiments showing that the emptying of the stomach contents is in proportion to the acidity. The contents are discharged more quickly in deficient acidity and anacidity than under normal acidity, while in hyperacidity the reverse is the case.

6. Das Experiment als Zeitgemässe und einheitliche Methode medizinser Forschung, Wiesbaden, 1900.

7. Archiv f. d. ges. Physiol., Bonn, 1874, vol. viii, p. 477; Kuss: Lehrbuch d. Physiolog.; Fenger: Allg. Wien. med. Ztg., 1893.

8. V. Zeissl: Wein. klin. Woch., 1896.

9. Matthews and Whitcher: Am. Jour. Physiol., vol. viii, No. 4, p. 302.

10. Meltzer: Am. Jour. Physiol., vol. ix, No. 5, p. 251.

11. Gad: Archiv f. Physiol., Leipzig, 1893, p. 170; Von Kries: Archiv f. Physiol., Leipzig, 1880, p. 370; Schenck: Archiv f. d. ges. Physiol., Bonn, 1891, vol. l, p. 166; 1892, vol. lii, p. 117; vol. lv, p. 236.

12. Openchowski: Archiv f. Physiol., Leipzig, 1880, p. 549.

13. Langly: Journal Physiology, Cambridge and London, 1898, vol. xxiii, p. 407.

14. Hlasko: Inaugural Dissert., Dorpat, 1887.

it lies in the corpora quadrigemina, and that probably the vomiting center is located in the same area, the fibers passing to the stomach along the spinal cord.

Cannon has shown that anger, fear and other mental disturbances inhibited the movements of the stomach.

Schiff and Morat both concluded that rhythmical contractions were increased after stimulation of the splanchnic nerves.

Carion and Hallion[15] found that section of the vagus nerve is sufficient to produce complete atony and permanent dilatation of the stomach of the dog.

Pawlow and Katschkowski[16] have shown that cutting even both vagi nerves produces only a temporary disturbance of the gastric movements. "Indeed," asserts Pawlow, "the operation is consistent with long life and an excellent condition of health."

As to the gastric movements being operated by the nervous mechanism, the variablences of experimental results and the diversity of conclusions prevent us from assuming any positive position, except to admit the coordinating and regulating influence of the nervous system.

We may still conclude with Ewald:[17] "Yet all these experimental stimulations in mammals have an indefinite and uncertain character; their success is not great, and by no means constant."

THE MECHANICAL WORK OF THE STOMACH.

The mechanical work of the stomach may be divided into three stages: 1, Distention with food; 2, expulsion; 3, relaxation.

The normal resistance at the pyloric end of the stomach increases the tension (lateral pressure), which, within physiologic limits, increases the stimulus to more powerful and frequent contractions. At the end of the digestion we find the maximum degree of power and number of contractions. According to Frank,[18] increasing the resistance in front corresponds to increasing the load. The resistance is in proportion to the angle of the pyloric funnel and size of the aperture. The size, according to Dwight, of the normal human pyloric orifice, which is usually oval in shape, varies from 7x4 mm. up to 20x18 mm. The greater the resistance within certain limits, the greater must be the size and thickness of muscle. A definite amount of work is dependent on the size of the muscle.[19] In frogs, 1 c.c. of muscle is capable of 3 kilogrammeters of work, while 1 c.c. of human muscle is limited to 8 to 10 kilogrammeters of work, so that increased resistance demands not only increased size or volume, but better quality of muscle substance.

We find that muscle becomes hypertrophied in proportion as the work increases within certain limits and physiologic conditions. Whether the increased work be due to increase in the load within the stomach cavity, or the increased resistance in front, hypertrophy is the result. If the work passes beyond the physiologic limits, fatigue or atony and dilatation follow. Thus atony and dilatation may be found as the result of increased resistance in front, such as by stenosis of the pylorus, and cause prolonged overwork and exhaustion of the gastric muscle, or the overwork and exhaustion may be due to constant and excessive work on the load within the gastric cavity when no obstruction exists. Overwork and ultimate exhaustion are the result in either case, but the pathology of these conditions and the treatment are a different question.

I have shown[20] experimentally that prolonged intermittent tension of gastric muscle produces fatigue and dilatation of the stomach.

Ewald[21] has clinically observed that "atony of the stomach causes lengthened stay of food in the stomach. The distention of the stomach in turn paralyzes its muscle fibers."

From Penzolt,[22] von Mehring[23] and Moritz,[24] we learn the time required for the normal stomach to empty itself of the various classes and amounts of food and liquids. Penzolt found that digestibility of food is influenced much more by consistency than amount up to certain limits. The increased quantity taken does not proportionately increase the duration of the sojourn of the food in the stomach. Twice the amount of food taken at a time does not double the time required for digestion; six times the amount of original quantity (300 grams) of beef only required three times the original length of time before leaving the stomach; crackers quadrupled in quantity only required twice the time, and of liquids the quantity could be increased five times, with only double the time of the duration of the stay within the stomach. These empirical experiments were made on the healthy human stomach, but, as Riegel rightfully observed, "similar conditions are obtained in a dilated stomach." The explanation of these facts may be found in Fick's observations.

According to Fick,[25] if a muscle work against a heavy load, one-quarter of the liberated energy results in mechanical work, but if the weight be light, not more than one-twentieth of the energy is obtained as mechanical work. These facts correspond to the universal law of work and fatigue in all animals. The kind and degree of muscle work that produce fatigue vary in different muscles of the same animal. The power of the blood to preserve the irritability of muscle is seen in the experiments of Ludwig and Schmidt,[26] von Frey,[27] and H. N. Martin.[28]

THE FATIGUE OF GASTRIC MUSCLE.

I have shown (Loc. cit.) that fresh muscle serum neutralizes the toxic fatigue products of fatigued gastric muscle.[29] I have repeatedly shown by experiments and clinical experience that in fatigue or exhaustion of the stomach a much longer period of rest should be given than under normal conditions. If exhaustion is the result of increased resistance in front, as in stenosis of the

15. Carion and Hallion: La Semaine Médicale, Paris, Aug. 31, 1895.

16. Pawlow: The Work of the Digestive Glands, English translation, London, 1902, p. 175.

17. Ewald: Diseases of the Stomach, Am. Trans., 1890, p. 461.

18. Frank: Zur Dynamik der Herzmuskels, Ztschr. f. Biol., 1895, vol. xxxii, p. 370.

19. Compare size of each muscle fiber of pregnant with non-pregnant uterus.

20. A Study of Fatigue in Gastric Muscle, American Gastro-Enterolog. Assn., Washington, D. C., 1903, Med. Standard, December, 1903.

21. Ewald: Loc. cit., p. 211.

22. Penzolt: Deut. Arch. f. klin. Med., 1, 535, 1893.

23. Von Mehring: Therapeut. Monatschr., 1893; and Verhandl. die XII Congress f. innere Med., Wiesbaden, 1893.

24. Moritz: Münch. med. Woch., 1893, No. 38; 1894, No. 41.

25. Fick: Pflueger's Archiv, 1878, xvi, p. 81.

26. Ludwig and Schmidt: Zitsungsberichte der Math.-Phys. Classe der k. sächs Gesellschaft der Widdenschaften, vol. xx, 1868.

27. Von Frey: Archiv f. Anat. und Phys., 1885; Physiologische Abtheilung, p. 533.

28. Martin: Studies from the Biological Laboratory, Johns Hopkins University, 1882, vol. ii, p. 188.

29. The toxins of fatigue caused, as I have shown, antibodies to form. These facts are in agreement with the more recent experiments of Weichardt (Münch. med. Wochenschr., Jan. 5, 1904), on the skeletal muscles of mice and rabbits.

pylorus, this rest can only be hoped for in the removal in one way or another of the obstruction.[30]

In other cases of atonic dilatation, a rational system of dietetics must be ordered; the pause for rest after the digestive period must be of sufficient duration for the stomach muscle to recover from the fatigue of each exertion. All the voluntary muscles are exercised by the daily activities of the body. Disturbances may arise from the abuse of muscle function, either by overwork or by lack of use. Food furnishes the normal exercise of gastric functions, and it is the abuses of the gastric function in one way or another that cause most of the pathologic results, one of the commonest disorders from infancy to old age. We may modify the term abuse in saying that what may be an error in quantity and character of food at one time may not be so under other conditions. Thus, after an acute disease, the greatest caution must be taken in the time, character and amount of the feeding.

DIETETIC MEASURES IN GASTRIC ATONY.

In the cycle of digestion there are a series of events: First, ingestion of food; second, the digestion and expulsion; third, the interval of rest. By the frequent small meal system in gastric myasthenia, the first event, namely, ingestion of food, impinges on the second and third events, or the second event (digestion and expulsion) lapses into the third event, which is the interval of rest, an important period in atonic dilatation. So long as food or remnants remain in the stomach, the gastric muscle is constantly excited by continued and fatiguing work. By giving a larger meal, but less frequently, the labor period is relatively shortened, while the interval of rest is prolonged. If one-half the quantity of food is given at one time, it does not lessen the digestive period one-half, as shown by Leube, Penzolt and others. In most instances a larger meal, varying within the limits, excites the gastric motor activity to increased peristalsis and more rapid expulsion of the stomach contents.

The value of a single meal daily not only allows rest for the fatigued organ, but serves as a recuperative means for the overworked secretory apparatus. Pawlow[31] shows experimentally that when food is prescribed in small quantities, at short intervals, it causes the oft recurrence of "appetite juice," which is so rich and strong, and when the whole ration has been eaten at once, there is an enormous drop in the formation of hydrochloric acid and ferment. Clinically, I have utilized this principle for years, and have proven its practical value in hyperchlorhydria with atonic dilatation. (See Cases 5 and 6.) The importance of the consistency and the physical effect of food are seen in giving a boiled starch mixture in cases of certain forms of atonic dilatation with hyperchlorhydria. (See Case 6.)

Usually two meals are ordered in the beginning of treatment—one in the morning and one in the evening. The composition, character and amount of food prescribed vary under various and peculiar conditions. The chief point to be aimed at is the consistency of the food, which should be semi-solid and finely divided, pleasant to the taste, a matter of great importance, as Pawlow has shown. By separating the meal-times more widely, we will often restore lost appetite, which is another very important factor of digestion. Where the appetite is excessive, a cracker and a little hot water just before the meal will often prevent the unnatural wolf appetite. Hot water is useful, as it passes in a shorter time from the stomach than cold water. In fact, one of the numerous causes, and not the least, of our American dyspepsia, is due to the large quantity of ice water drank at all times, on all occasions.

Many important problems in the dietetics of atony of the stomach must necessarily be omitted here. We shall consider the application of dietetics to the one condition of diminished, or loss of muscle tonus, and contraction, on which are dependent many associated symptoms. For example, if it is found in gastric myasthenia that 150 grams of meat, 200 grams of carbohydrates, 30 grams of fat and 300 c.c. of fluid escape from the stomach in eight hours, we must not conclude that we can immediately repeat the same amount, for the reason that a longer period of rest must supervene after the meal to allow sufficient time for the weakened muscle to recover from fatigue. The muscle will accomplish the work if the given rest period is sufficiently prolonged to enable it to recover from the exertion.

AUTOSTERILIZATION OF THE STOMACH.

Prolonged rest, however, not only allows the fatigued muscle to recuperate and regain energy, but also permits ample drainage, thus preventing bacterial growth. Bacteria do not flourish luxuriantly in the empty and clean stomach. Each time food is ingested before the remnants of the previous meal pass out of the stomach, the food is inoculated by growing bacteria developing in the remnants of previous meals. The stomach gains no opportunity to disinfect itself, which it may do in the empty and restful state. Complete recovery can not be expected when frequent, though small, meals are continued at short intervals throughout the day or into the night, as our text-books recommend.

To summarize: The two main pathologic conditions to be corrected in atonic dilatation of the stomach are: 1, The exhaustion of the gastric muscle; 2, the bacterial growth in the gastric cavity.

The length of time a given quantity of food remains in the stomach, and the appearance and chemical condition of the food mass after a given period of digestion, aids in the diagnosis and determination of the dietetics to be prescribed.

THE APPLICATION OF DIETETIC METHODS.

As previously stated, the main object is to correct by dietetics the muscle weakness. This is done not only for the nutrition of the patient, but to prevent bacterial growth and the resulting toxins, which produce many of the grave symptoms found in this serious malady. Nature here might teach us a lesson. When an acute attack of nausea and vomiting occurs, with total anorexia, enforced rest of the stomach is accomplished. So, with our therapeutic measures, it is often necessary to place the stomach in a state of complete rest, and administer all food by the rectum.[32] It may be necessary when giving food by the mouth to lessen the total amount and undernourish the patient. The gain here is twofold: First, the food that is taken is better digested; and, second, it is not robbed of its nutritive value by bacterial growth.

In beginning a course of dietetic treatment, after the stomach has been placed at rest, the question of the

30. Riegel (Diseases of the Stomach. Am. Trans., Philadelphia, 1903, p. 385) says: "In one case we may be dealing with an absolute primary loss of muscle power; then we speak of atony. In another case the muscular power may be abnormally increased; there may be even hypertonicity, but the amount of work to be done is so large that even this increased muscle power becomes insufficient."

31. Pawlow: Loc. cit., p. 136.

32. Rösler: Wien. klin. Woch., 1893, No. 30.

character, composition, preparation and time of giving food presents itself. A uniform diet for all the degrees and forms of atonic dilatation can not be arranged. Theoretically, a liquid diet would be most advantageous. Practically, it is better to give finely divided solid food, properly prepared, with appropriate amount of liquid, sufficient to aid the stomach to macerate the mass and inject it into the intestines.

If 3,000 calories are required of a mixed diet under normal conditions, it may be necessary in the beginning to cut this down to as low as 1,000 calories. For example:

100 grams breast of chicken finely ground.
100 grams mashed potatoes.
100 grams toasted bread.
30 grams butter.
300 c.c. hot, rich milk, which is first coagulated with rennet, in order that it may not coagulate in the stomach; then shaken back to liquid and heated.

The above furnishes about 1,000 calories, and may be taken in one meal, and the patient instructed to lie down on his right side for two hours. No more food is allowed until the following day. Water may be given by the rectum. In some cases it may be necessary to give, in addition, rectal feeding; often this is a disadvantage. Many of these patients have complete anorexia, and only forced feeding will restore the appetite and gain the necessary exercise for the stomach muscles and resulting nutrition. The following method has been of considerable advantage: One hundred grains of meat are first ground and placed in water for a few hours. The extractives are pressed out by a meat press and discarded; part of the albumin is lost, but this can be made up. Discarding the extractives lessens the irritation of a meat diet; 300 c.c. of milk are coagulated with rennet and shaken up to a liquid state and heated. Crackers are pulverized; one or two hard-boiled eggs are finely grated; bran is added sufficiently for "ballast." This is placed in a wide-mouthed bottle and thoroughly shaken. A cork is tightly fitted with two glass tubes, a rubber atomizer bulb is attached to one of the glass tubes, the other fits into the stomach tube, and the food is forced into the stomach by air pressure, which also keeps the glass tube from becoming plugged. Thus solid food can be given. Weak, jaded patients with complete anorexia and apparently no digestive energy, endeavoring to exist on the spoonful system of diet frequently exhibited, will by this method of forced feeding begin at once to show a desire for food. The exercise of the stomach brings about restoration of the digestive functions, and the patient soon begins to take his food independently with a relish.

Paradoxical as it may appear, a small quantity of food, as an Ewald test breakfast, will remain longer in the stomach of a patient with atonic dilatation and show less peristaltic activity than a large Leube test dinner. Clinically, it is frequently noted that a patient suffering from atonic dilatation of the stomach taking very small, but frequent, meals (either because so instructed or from fear of distress) will indulge in a comparatively large meal, followed by less degree of retention, with general improvement of the digestive activity.

In all cases with any marked degree of atony of the stomach, the patient must be strictly instructed to lie down after meals. Lying down for a time after a meal relieves the congested vessels, as the abdominal veins are devoid of valves.

In these cases of atonic distention of the stomach, the physiologic hyperemia during digestion becomes a pathologic congestion of the splanchnic vessels. The circulatory changes on distending the stomach are well recognized. The degree of these changes is shown in some recent experiments on the splanchnic circulation.[33] Lying down not only relieves the vessels, but also the muscle walls of the stomach, and by turning to the right side the ingesta shifts into the antrum pylori, which, as before stated, is the active mechanical portion of the stomach.

Von Mehring[34] has recently shown by experiments that lying down on the right side causes a more rapid emptying of the stomach.

The following cases are of interest, as examples of practical results obtained:

CASE 1.—Dr. M., suffering from atrophy of gastric glands, motor insufficiency and dilatation of the antrum pylori. He had been in the habit of taking small and frequent meals, as he thought it gave more comfort. He was ordered two meals a day, one in the morning and one in the evening, gradually increasing to a liberal quantity. This resulted in great improvement. The motor power was restored to normal. The glandular condition remained the same. Several years have elapsed since treatment, but condition of the patient remains good.

CASE 2.—Dr. W., atrophy of stomach, supposed to be carcinoma. Motor power very weak; marked retention. Frequent meals had been ordered. Result, emaciation and general decline. Treatment consisted of, first, one meal daily; afterward this was increased to two meals daily. The stomach, which had failed to respond to the smaller meals, was stimulated by the large ones.

CASE 3.—C. Z., suffered from atrophy and atonic dilatation, with great emaciation and toxemia, the latter probably resulting from the dilatation and not from the atrophy. He had been taking small and frequent meals. By increasing the quantity and at the same time the interval between meals the condition rapidly improved. No return of glandular secretion, but motor power was restored.

Recent examinations and reports from the above cases show continued improvement under this diet system. The following case will illustrate a condition which I have repeatedly noticed:

CASE 4.—A Southern woman, Mrs. M., wife of a physician, suffering with great weakness and emaciation, was bedridden as the result of chronic atonic dilatation of the stomach. Free HCl absent. Small and frequent meals had been administered with the usual line of treatment, as is customary in these cases. On examination, the stomach was enormously dilated, and the gastric wall in an advanced state of atony. A small Ewald test meal remained in the stomach twenty-four hours. A large meal of finely divided meat, mashed potatoes and bread and butter passed out of the stomach in ten hours. A single large meal was given once daily until the stomach gradually regained its tone; after this a small quantity of food would stimulate the muscle movements sufficiently to entirely empty the stomach.

The following are cases of hyperchlorhydria and atonic dilatation:

CASE 5.—Mr. D., aged 48, suffered for years with atonic dilatation of the stomach with a high degree of hyperchlorhydria and supersecretion. He was incapacitated for any kind of business, which he had given up for two years, and had all the usual treatments for such condition—lavage, electricity, baths, springs, drugs and travel. At last, operation was the only hope offered, which he refused. On examination five years ago remnants of food, albumoses and free hydrochloric acid were found in the stomach twenty-four hours after inges-

33. Proc. Am. Gastro-Enterolog. Assn., 1900; Am. Therapist, November, 1900.
34. Von Mehring: Therap. d. Gegenwart, No. 5, 1902.

tion. He was placed under treatment. Only 340 meals were allowed in 340 days, one meal a day. Complete restoration followed. The hyperchlorhydria and supersecretion disappeared with the atonic dilatation. Recent examination proves a permanent result. He now takes two meals a day, one in the morning and one at night.

Case 6.—A young man, aged 23, Mr. T. F., manifested every symptom of complete pyloric stenosis; great pain, vomiting and absolute weakness; emaciation. Frequent small meals of meat juice, peptones, rice, eggs, milk and most patent food preparations. Examination showed a high degree of atonic dilatation, with .35 per cent. free HCl. Retention of food four days; complete stagnation. The stomach was placed at complete rest for two days. First feeding, liquid corn starch boiled; four teaspoonfuls of the corn flour to 600 c.c. of water, sweetened and flavored. Next day repeated. Gradually increased quantity of starch; two meals a day, adding gradually macaroni, eggs, milk (first coagulated), and, finally, mixed diet. Result in ten days showed marked retraction of the dilated stomach, which emptied itself in six hours.

PHYSICAL METHODS ASSOCIATED WITH DIETETIC TREATMENT.

In connection with diet, certain mechanical methods of treatment are not only useful, but often indispensable. For the mechanical effects, lavage is recommended by most of the text-books, and added to this galvanic and faradic electricity, general baths, exercise and drugs. A large share of the patients I have treated in the last ten years had all these methods used, without success, often with harmful results. I have presented many of this class of patients, after a course of treatment, before this society on several occasions.[25] The objections to lavage have also been shown. While lavage has its use, in complete stagnation, as a palliative measure, those methods are most valuable, as I have frequently demonstrated, that can mechanically affect the gastric muscle directly, without washing out the necessary nutriment and secretion from the stomach cavity. Riegel seems to have obtained but little benefit from the use of static, galvanic or faradic electricity. I have found high frequency with the Oudin resonator of considerable benefit as an adjuvant.

CONCLUSION.

Physical and mechanical disturbances of digestion require that more attention be paid to the physical and mechanical effects of dietetics on the physiology of the gastric muscle.

EXPERIMENTS.

1. Method of determining the effect on the muscle movements of the stomach of dogs with various classes of food, gastric secretion, and the products of digestion when applied to the mucous membrane of the stomach. 2. The effect of tension on gastric movements.

The control dogs fasted for twenty-four hours. The abdomens were opened and covered with a very thin rubber diaphragm stretched across a frame to prevent evaporation. The surrounding area was kept warm. The spontaneous movements could be readily observed through the rubber diaphragm. The movements were noted as to the number of peristaltic waves, degree of contraction, length of each contraction, and time. The movements usually occurred not more than a minute apart; occasionally one every thirty seconds; frequently a pause of two or three minutes. They were characteristically weak and sluggish; many of the waves barely noticeable. Whenever the air was allowed to reach the abdominal cavity, movements were excited. The movements were restricted to the pyloric end of the stomach. The dogs used in the experiments were prepared in the same manner as the control dog, and placed side by side to observe any differences in the movements of the stomach. Injection of the substances used was accomplished with a piston syringe attached to a small needle douche, so that the fine jets or streams were projected against the mucous walls of both the pyloric and cardiac ends of the stomach.

Series 1.—Twenty c.c. of the solution or mixture of the following substances were injected into dogs' fasting stomachs; time of each observation, twenty minutes.

1. Filtered stomach contents withdrawn from a dog's stomach three hours after meat and bread.
2. HCl, .1, .2, .5 per cent. solution.
3. Pepsin, 1 gram.
4. Peptone, 2 grams.
5. Starch mixture.
6. Sugar, two grams.
7. Alcohol, 25 per cent.
8. Water.
9. Strong bouillon.

The above caused no increase in number or force of contractions. The following caused slight increase in number of contractions.

10. Tincture capsici, gtt. 3.
11. Mustard oil, gtt. 2.
12. Oil of cloves, gtt. 3.

The same substances were injected into dogs' fasting stomachs one hour before opening abdomen. No increase in number or force of contractions, as compared with the control.

Series 2.—Mechanical effects of tension.—1. In the first experiment, 300 c.c. water, at a temperature of 38 C., were introduced into the stomach, causing increased peristalsis.

2. Then 500 c.c. water, at 38 C., introduced into stomach, also caused increased peristalsis. On the water being allowed to return, the movements were markedly increased.

3. Water, 500 c.c. at 38 C., was introduced into a bag in the stomach, attached to a double stomach tube; movements were increased. The water was allowed to flow out and the peristaltic waves increased in number and frequency.

4. The temperature of the water was increased to 50 C.; this increased the muscle contractions.

5. Air was forced into the bag. One outlet of the double tube was attached to a manometer, the other to a compressed air tank. When the tension was raised to 10 mm., after a pause, the movements became more vigorous. After the air was allowed to escape, the peristaltic waves increased in number.

6. Repeated introduction of air and allowing it to escape was continued for five minutes, causing very vigorous movements.

7. Increasing the tension up to 30 mm., and allowing the air to escape slowly, caused rapid peristalsis, one wave every one or two seconds. The antrum pylori appeared like a corrugated tube. Ring-like movements confined to the pyloric region. Some waves were noted in the cardiac region, but no constriction. After repeated vigorous exercise, apparent antiperistaltic waves were noted.

8. Heating the air by passing it through water at a temperature of 70 C. increased the force and number of contractions.

25. Therapeutic Gazette, June 15, 1895; Chicago Clin. Review, January and February, 1896; North Am. Pract., February, 1899, vol. xi, No. 2, p. 65; Chicago Med. Recorder, vol. xvi, No. 2, 1899, pp. 112 and 189; vol. xviii, No. 1, 1900, p. 66; No. 2, 1900, pp. 140 and 200; International Clinics, vol. ii, 11th series; Medicine, June, 1900.

9. Passing CO_2 through the stomach with the double tube caused increase in the movements in proportion as the pressure was increased.

10. Introducing the vibratory apparatus into the stomach caused a "shattering" of the gastric muscle and increased peristalsis.

THE MATHEMATICS OF THE DIABETIC DIET.*

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There is a popular prejudice to the effect that glycosuria calls for complete withdrawal of carbohydrates. This is occasionally good practice. In the majority of cases, however, it is superfluous, and imposes unnecessary hardship on the sufferer; and in many cases it is decidedly bad practice and dangerous. This routine treatment is to be condemned on two grounds chiefly, viz., (1) because it is almost impossible to adequately nourish these patients unless the carbohydrate is replaced, bulk for bulk, by other food equivalents; (2) because the complete withdrawal of the carbohydrates eminently favors the development of acidosis, and incidentally precipitates the almost inevitable consequence of acidosis, viz., diabetic coma. I venture to say that failure to mathematically regulate the nutrition of sufferers from diabetes, in innumerable cases leads to death from slow starvation, and that complete and injudicious withdrawal of the carbohydrate elements of the food precipitates the development of coma in many cases where it could well be prevented.

In order to fully appreciate the beautiful accuracy that can be adopted in feeding diabetics, it is necessary to appreciate the significance of the laws of nutrition, as we understand them to-day. Basing on the knowledge of metabolism that has been evolved from latter-day researches in physiologic chemistry, we can almost mathematically regulate the diet in diabetes. The gratifying results obtained from this practice fully justify the pains that must be expended in studying the problem carefully in each case that comes under observation.

THE MAINTENANCE OF GENERAL NUTRITION IN DIABETES.

For measuring the nutritive value of the different classes of foods, the term "calorie" has been imported from the realm of physics. A calorie is that amount of heat that is needed to raise the temperature of 1 kilo of water 1 degree (Celsius). Each article of food, it has been found, in process of metabolism (i. e., of assimilation, oxidative disassimilation and elimination) in the body generates a definite quantity of heat, or the mechanical equivalent of this heat in labor. Expressed in calories:

1 gr. of proteid furnishes	4.1 cal.
1 gr. of carbohydrate furnishes	4.1 cal.
1 gr. of fat furnishes	9.3 cal.

It has further been determined that a normal adult requires from 30 to 35 calories a day per kilo of body weight, and that these calories can be furnished by any one or all of the three classes of food vicariously. If this caloric value is not supplied, the body must consume its own tissues, and as a result emaciates.

In the case of diabetes, with the loss of valuable unconsumed sugar in the urine, the average diet does not furnish sufficient caloric value, as may be seen from the following example that I quote from my case book:

CASE 21.—Mrs. W. P. Weight 60 kilo. Calories required for adequate nutrition, 60×35=2100.

Average diet on six successive days:

Proteids ..... 150 g. × 4.1 =	615.0 cal.
Carbohydrates ..... 190 g. × 4.1 =	779.0 cal.
Fat ..... 110 g. × 9.3 =	1023.0 cal.
	2417.0 cal.
Average daily sugar excretion. 160 g., × 4.1 =	656.0 cal.
Resulting food value only ..... =	1761.0 cal.

Instead of receiving, therefore, the full caloric value required, i. e., 2100 cal., the patient, owing to the loss of sugar, only received 1761.0 cal., although the diet represents 2417.0 cal. This represents a deficit of 2100—1761=339 cal. And these deficient calories must be supplied from the destruction of the patient's proper tissues.

One can further readily calculate what proportion of this deficit is made good from the albumin of the patient's tissues, which from the fat, and the diet can be regulated accordingly. All one has to do is to determine the output of nitrogen in the urine and feces, and compare it with the nitrogen intake (food nitrogen).

This patient, for instance, received in the daily diet 150 g. of albumin, and as albumin contains 16 per cent. of nitrogen, this amount contained 24.0 g. of nitrogen. On this diet the patient excreted a daily average of 23.7 g. of N. in the urine, and of 3.1 g. of N. in the feces, making the total N. output 23.7+3.1=26.8 g. of N.

The N. output, therefore, is greater by 2.8 g. (26.8—24) than the N. intake, and this excess must have been derived from the patient's own albumin. As 2.8 g. of N. are contained in 17.5 g. of albumin ($\frac{2.8}{16} \times \frac{100}{16} = 17.5$) and 17.5 g. of albumin can produce 71.75 calories (17.5×4.1=71.75), there remain only 268.25 (339—71.75=268.25) of the 339 deficient calories to be accounted for. As these must be derived from the patient's fat, one can readily determine by dividing 268.25 by 9.3 (the caloric value of one grain of fat) that 28.8 g. of the patient's fat were consumed.

The patient, therefore, on a diet valued at 2417 calories, i. e., considerably more than the calculated value necessary to nourish a normal subject of 60 kilo (2100 cal.), lost 17.5 g. of her own albumin and 28.8 g. of her own fat.

Hence the polyphagia that is so common in this disease. The patients eat as much as a normal subject, but the diet does not adequately nourish them. "Stomach hunger" may be appeased, because the stomach is filled, but "tissue hunger" soon appears. This hunger only disappears when the meat and fat are increased.

THE BOUNDARY OF SUGAR ASSIMILATION IN DIABETES.

If it were absolutely true that diabetics could use none of the sugar that enters the blood stream, the question of feeding would be theoretically a very simple one, viz., one would have to exclude carbohydrates and replace them by meats and fats of sufficient caloric value to make up the caloric deficit.

As a matter of fact, this is not the case. Only a small minority of cases are altogether unable to utilize any of the sugar. These are the very grave cases that are, fortunately, rare, and would be still less frequent if many milder cases were not transformed into grave cases by injudicious dieting. In these patients it may be necessary to withdraw all carbohydrates for a time, but the almost inevitable result of this practice, as I

* Read in a symposium on dietetics before the Chicago Medical Society, Jan. 20, 1904. For the other papers see THE JOURNAL, Jan. 30, p. 329.

will presently show, is the dreaded development of acidosis and death from coma. In the great majority of cases the patients can utilize some of the sugar, and it is absolutely bad practice to withhold this food permanently; it is equally bad practice, however, to give such cases too much sugar, for this is apt, by overtaxing of the sugar-destroying function, to "fatigue" this function and to lead to increased inability on the part of the body to utilize sugar. It is necessary, therefore, in each case, to determine the exact tolerance of the body, the so-called boundary of assimilation, and to feed the patients accordingly.

This is done as follows: One must remember that the normal body can destroy very large quantities of sugar (and other carbohydrates). The source of this sugar is twofold. One part comes from the food; the second from the tissues of the body, chiefly the albumins, the latter, as is well known, splitting off sugar molecules in process of intracellular degeneration. Immaterial whence the sugar is derived, a portion is burned up at once, a part is stored as glycogen in the liver, muscles, glands and working organs of the organism, and a part is finally converted into fat and stored. Occasionally too much sugar enters the blood from without (but this event is rare and requires colossal quantity), so that all the sugar reservoirs become filled. Then the percentage of sugar in the blood increases abnormally (hyperglycemia) and some of the sugar is wasted in the urine (alimentary glycosuria). The same event, i. e., hyperglycemia followed by glycosuria, occurs if the powers of the organism to destroy the normal amount of sugar or to store it as glycogen or fat become insufficient. For it is clear that if less sugar than normal is destroyed or stored, it must also accumulate in the blood and appear in the urine. The latter condition obtains in diabetes.

THE THREE DEGREES OF DIABETIC GLYCOSURIA.

It is conventional to distinguish several degrees of diabetic glycosuria that vary in degree but not in kind. In the mildest kind all the sugar disappears from the urine in a few days if the carbohydrates of the food are withheld. In such cases the addition of small quantities of carbohydrate to the diet may not even cause glycosuria; as soon as more than a certain quantity (less, however, than the amount required to produce alimentary glycosuria in a normal subject) is given, sugar invariably appears in the urine. In some of the cases, further, no sugar appears if a considerable quantity of carbohydrate is given in small, divided doses, whereas the ingestion of the same quantity at once is followed by glycosuria. In these cases, then, the power to destroy sugar is by no means completely lost; for even when we withdraw all carbohydrates from the food, a certain amount of sugar (as stated in a previous paragraph) nevertheless enters the blood stream "from within," i. e., from the degradation of the circulating and organized albumin molecules that split off a sugar group. This sugar the organism can completely utilize in the mild form, and in addition it can utilize a certain portion of the food sugar.

In the severe form of diabetic glycosuria, we encounter altogether different conditions. Here the sugar never disappears completely from the urine, even if all carbohydrates are withheld for days or weeks. This indicates that not even the sugar that is derived from the intracellular disassimilation of albumin, and from the disassimilation of the food albumin, can be utilized. In extreme cases, even complete withdrawal of all food does not stop the sugar excretion, indicating that even the small quantities of sugar derived from the destruction of the patient's proper albuminous tissues are only incompletely utilized.

In still other cases, the carbohydrates must be excluded from the diet and the albumin considerably reduced before the glycosuria is inhibited. These cases properly constitute a third group, i. e., diabetic glycosuria of medium severity. The boundaries of this group are not clearly defined, and many transition forms between it and the mild cases on the one hand, the severe cases on the other, can be arranged. With proper dieting, cases of medium severity can usually be converted into the mild type; with improper dieting, they almost invariably develop into the severe type.

To summarize: One may speak of the mild form of glycosuria if the sugar excretion stops at once after withdrawal of carbohydrates, if it does not reappear when small quantities of carbohydrates are administered, and if at no time the amount of food albumin need be reduced.

One may speak of the medium form if not only the carbohydrates must be withdrawn completely before sugar excretion ceases, but the food albumin must also be reduced to such a point that less than 18 g. but more than 10 g. of N. appear in the urine.

One may speak of the severe form if, in order to stop the glycosuria, the carbohydrates must be stopped, and in addition so much albumin must be withdrawn that less than 10 g. of N. appear in the urine. Cases in which even this deprivation of food fails to reduce the glycosuria are, of course, also to be included under the severe form.

DETERMINATION OF THE DEGREE OF GLYCOSURIA.

A popular method for determining the degree of glycosuria is the following: The patient is given what may be called the "diabetic test meal." This consists of a carbohydrate-free portion and a weighed portion of some carbohydrate food. The former may be composed of meats (about 350 g.), eggs, cream, cheese, spinach, asparagus, salad with oil dressing, meat broths, tea, coffee, claret. The latter consists of 100 g. of white bread, preferably administered in two portions of 50 g. each, in the forenoon and afternoon. At times it may be necessary to administer other carbohydrate food instead of white bread, because it may be of practical importance to determine the tolerance of the organism for other starchy foods and for the different sugars.

If the patient on this diet (carbohydrate-free meal +100 g. of white bread) excretes no sugar, then we are dealing with a very mild form of glycosuria; the amount of bread should then very gradually be increased on successive days until sugar finally appears in the urine. Thus, if the patient on one day exeretes no sugar after eating 3×50 g.$=150$ g. of bread, and on the next day passes sugar on $4 \times 50 = 200$ g. of bread, then the "boundary of assimilation" (see above) lies between 150 and 200 g. of white bread.

If the patient excretes sugar on the test diet, then we are dealing either with the mild or the medium form. If after withdrawal of the 100 g. of bread the glycosuria stops, then it is a mild form. If the sugar secretion still persists, then the case is medium or severe. The food albumin must now be reduced. If the glycosuria stops after the albumin is reduced to such a point that less than 18 g. of N. appear in the urine,

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then the case is one of medium severity. If the albumin must be reduced so much that less than 10 g. of N. appear in the urine, or if it does not stop after the withdrawal of all food, then we are dealing with a case of severe diabetic glycosuria.

I need hardly emphasize that one single determination of this kind is of little value in so chronic a disease as diabetes; consequently the above tests should be performed several times during the year. Only in this way can the success of the dietetic treatment instituted on the basis of such tests be gauged. One must, moreover, never forget that incalculable fluctuations in the sugar excretion and in the tolerance of these patients for sugar occur in nearly all the cases, and that a single determination of the boundary of assimilation may hence lead to wrong conclusions.

PRACTICAL DIETETICS BASED ON THE ABOVE PRINCIPLES.

Within the narrow scope of this article, only the broad principles underlying the feeding of diabetics can be declared. The fundamental postulate is to maintain the patient's nutrition, and this is essentially synonymous with maintaining what is called "the nitrogen equilibrium"; i. e., the N. output must never exceed the N. intake; in other words, the albumin content of the patient must be jealously maintained. The patient, therefore, must receive food that, after the deduction of the sugar wasted in the urine, allows him to utilize at least 35 calories per kilo of body weight *pro die*.

The amount of carbohydrate permitted must be determined according to the methods described above, i. e., the boundary of assimilation must be established. Theoretically, this is a very simple matter. The physiologic chemist may be guided exclusively by the results of these tests. The physician should, however, take into consideration certain clinical aspects of the question that may induce him to modify according to his best judgment the mathematical conclusions that are forced on him.

Thus, on the one hand, it may become necessary to reduce the carbohydrates considerably below the established boundary of assimilation, or even to exclude them altogether for a time, if it is found that the tolerance of the patient is growing less; if this precaution is not observed, the mild form may be rapidly transformed into a severe one. One may say axiomatically that the reduction of the carbohydrates considerably below the tolerance of the patient, places the sugar-destroying function at rest and thus enables it to regain its old power, and that inversely, crowding of the carbohydrates to the limit of tolerance engenders fatigue of the already impaired function, and hence reduces the tolerance of the organism for sugar. In addition, we know from experience that the reduction or withdrawal of the carbohydrates greatly aids in combating certain complications that may endanger the life of the patient. Occasionally these only yield if carbohydrates are withdrawn or reduced to a minimum for a time. I refer, e. g., to furunculosis, pruritus, neuralgias, retinitis, etc.

On the other hand, it may occasionally be good practice to give more carbohydrates than the mathematical tests indicate. The removal of the glycosuria is not the only aim, for the excretion of sugar is, after all, merely a symptom. True, it is our chief index of the progress or regress of the disease, and the loss of sugar constitutes the chief danger to the patient. Nevertheless, the loss of some sugar in the urine may occasionally be less dangerous to the patient than the withdrawal of all carbohydrate from the food. Rather prolong the patient's life, even though glycosuria persists, than stop the glycosuria and incidentally hasten the patient's death.

Two reasons chiefly should induce us to give carbohydrates to patients with glycosuria, even at the risk of increasing the excretion of sugar, viz.: (1) The impossibility of adequately nourishing most patients on a meat-fat diet alone; (2) the increased danger of acidosis and coma incident to the withdrawal of all carbohydrate.

A meat-fat diet would soon become utterly disgusting to a well person, and he could ill tolerate the withdrawal of carbohydrate. A diabetic, moreover, has an abnormal craving for carbohydrates, particularly bread.

Albuminous foods alone can not be given in sufficient quantities to furnish enough calories. The addition of fat may make up the deficit, but it is a peculiar fact that one can eat much more fat with relish if some carbohydrate is given, than without it; here also alcohol with its 7 calories per gram often helps out. If the patients do not relish their food, the normal psychic stimulus so necessary to normal gastro-intestinal digestion is sacrificed; the poor appetite induces the sufferer to eat too little; the perverted gastro-intestinal secretions only inadequately prepare the food for assimilation, and the inevitable result is starvation, and the development of the manifold complications incident to malnutrition.

As far as the development of acidosis finally is concerned, we know that a certain amount of carbohydrate is necessary to promote the oxidation of the members of the acetone group (oxybutyric acid, diacetic acid and acetone) that escape destruction and thus accumulate in diabetics. If all carbohydrate is permanently withdrawn, this oxidation is particularly difficult. It is a well-known fact that in diabetics the administration of a little carbohydrate will greatly reduce the acetone excretion and will often cause the rapid disappearance of oxybutyric acid and diacetic acid from the urine. Hence, in acidosis and impending coma, the administration of carbohydrates, if necessary dextrose per rectum or levulose intravenously, is good practice; and in the same sense the occasional administration of moderate quantities of carbohydrate pabulum is good preventive treatment.

The practical execution of the dietetic treatment of diabetes has only barely been touched. It is clear that much can be done for these patients, provided each case is studied with the accuracy of a metabolic experiment. The "busy practitioner" may argue that he has not the time to perform all these determinations. That may be true, but then he should not undertake to treat diabetes. Properly speaking—and the plan is gaining widespread and deserved popularity abroad—a diabetic should be treated in an institution, or should at least from time to time undergo a few weeks' observation and treatment in a hospital, where his case can be studied as outlined above.

I make an earnest plea for more careful, more mathematical regulation of the diet in this class of sufferers, and I emphatically decry the slovenly, the criminal routine habit so universally adopted in this country, of handing every patient with sugar in his urine a diet-list on which is found printed a list of articles that contain no carbohydrates.

THE RELATION OF NATURE'S PROVISION FOR HEART STIMULATION AND CONTROL TO THE USE OF CARDIAC DRUGS IN ACUTE DISEASE.

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Before plunging into the indiscriminate use of drugs which have the property of causing the heart to beat more strongly, it is well to consider what provision has already been made in the same direction by the body itself, and also what is the precise object of such intervention in a particular case.

The heart is wonderfully responsive to the demands of the body when subject to exertion or disease. In acute conditions, stimulation in the sense of urging the heart to expend more energy is seldom demanded except in sudden emergencies. Fever is a great heart stimulant, as is also inflammation.

The use of the term "heart stimulants" in reference to drugs that are used in the course of disease with the idea of assisting the heart and preventing the failure of its powers when they may be most needed, is a crude employment of words and has led to much misconception. Who would think of whipping a horse that was already struggling under an unusual load, or further opening the throttle of an engine when it was going too fast?

The fact is that we have but a few heart stimulants in the true sense of the word, and we hardly ever use these. The only time when drugs are used with the direct purpose of stimulating the heart is in sudden emergencies. Then we avail ourselves of the fact that many drugs which are useful as heart regulators also possess the property of temporarily stimulating the heart. The best heart stimulants, however, such as ammonia, ether and nitrite of amyl, are poor regulators, and the best regulators, such as digitalis, strophanthus and iodid of soda, are poor stimulants when quick action is needed.

The whole question of heart stimulation needs revision in its clinical aspect. A good beginning could be made if the term stimulant were dropped entirely and the idea of regulation substituted. A hundred lives are saved by the judicious control of the overstimulation which results from disease where one is saved by direct stimulation as such. The only excuse for the use of heart stimulants is that they have been misnamed and are useful as regulators.

The misconception of the importance of stimulation as an element in recovery from disease has unquestionably led to much harm. When in a very sick person it is found that the pulse is slow, reflecting only the weakness of the patient, one should rather rejoice than otherwise. Circulatory failure does not, as a rule, take place in this direction. Primary low arterial tension without excessive rapidity is not ordinarily dangerous if let alone. Such a heart may carry on its work successfully, while if injudiciously drugged, it may be so exhausted that if the stage of the rapid and feeble heart be reached, there may not be reserve force enough to carry the patient through the disease. I have repeatedly seen cases in which, on account of simple feebleness of the pulse in acute disease, the patient had been drugged beyond measure, with the result that the heart and pulse were showing most erratic action, but in which, the occasion for the original stimulation having passed, the withdrawal of all drugs soon restored the heart action and pulse to normal.

Failure of the heart most frequently takes place in the direction of increased rapidity. This is probably due to the failure of a very radical element in the living organism known as inhibition. In connection with the heart, the nerves which conduct this impulse from the great nerve centers which seem to be the center of life, are well known. The same influence in one form or another affects every organ and tissue of the body. On it depends co-ordination in every vital process. An instance of its failure to act is seen in increased patellar reflex, due to cutting of the path of connection between the brain and the muscles of the thigh.

So increase in rapidity of the heart in disease tending to dissolution is a very radical thing, and is only successfully combated by measures influencing vitality itself, such as improved nutrition of the whole body, improvement of the nervous system at large, and the removal of those things which are acting contrary to the interests of the whole physical economy. I can remember, as a medical student, bringing to bear, when opportunity afforded, every known heart drug in the attempt to control the rapid and feeble heart action of dying patients, and I could not understand at that time why so little was accomplished.

In acute disease, while there is life there is hope of the restoration of the patient to health, so that I strongly advocate the most strenuous efforts to the very last to avert the tendency to death; but there are certain limits beyond which drugs having a direct influence on the heart are no longer useful. If the patient is to be saved it must be done by the restoration of the inhibitory quality by measures directed to the restoration of the whole bodily economy, hence the value of strychnin, of hydrotherapeutics, of nutrition, and above all, of sleep and the removal of exhausting influences.

Interesting as they are and important, the consideration of the mechanics of the circulation must give way to the consideration of the patient himself as an individual. There is a trite saying that a man is as old as his arteries, and in acute disease it may be said, as a rule, that the heart is as good as the man.

The moral of it all is that in acute disease the question of cardiac drugs is a matter that must not be lightly considered. I would like to hear the views of other general practitioners on this important subject.

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OBSTRUCTION AND CONSEQUENT DISTENTION THE CAUSE OF APPENDICITIS,

AS PROVED BY CASES AND BY EXPERIMENTAL APPENDICITIS IN DOGS.

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We frequently find an obstructed and overdistended appendix, and the earlier in the attack the appendix is seen the more frequently is this condition observed. It is constantly mentioned by writers, and is by several connected with the production of gangrene, notably by Hartley,[1] Ochsner[2] and Hemmeter.[3] Robert Abbe[4] has made mention of this condition in connection with his study of stricture and recurring appendicitis. Dieu-

1. Hartley, Frank: Dennis System of Surgery, 1896, vol. iv.
2. Ochsner, A. J.: Medical Standard, 1901, March to November.
3. Hemmeter: Diseases of Intestines, 1902.
4. Abbe, R.: Medical Record, Feb. 16, 1901.

lafoy[5] has said much about his theory of a closed sack and its effect in increasing the virulence of bacteria.

I fail to find, however, any reference to the resulting hydraulic pressure on the blood vessels of the mucosa and submucosa and the consequent blood stasis in the inner layers of the entire wall of the distended sack. This is to me the important missing link between constriction and infection, and the point toward which this paper is principally directed.

The appendix has a firm fibromuscular wall pierced by numerous blood vessels, which ramify the submucosa and are distributed to the mucosa. The muscular coats are circular and longitudinal, and no doubt actively contract and force material from the canal (Deaver). The cavity of the appendix usually contains fecal matter and always numerous bacteria.

The blood pressure in the veins is minus, in the capillaries from 4 to 6 mm. mercury, and in the arteries 90 to 160 mm. As soon as the hydraulic pressure within the appendix or any occluded portion exceeds 6 mm., there will be more or less capillary stasis. The higher this pressure climbs the more will the blood current be interfered with, until at 90 to 160 mm. evidently complete blood stasis must follow. In the presence of the normal bacteria of the appendix, this blood stasis will be speedily followed by infection and, if complete and permanent, by necrosis or gangrene.

The obstruction in the appendix may give way, the interference with the circulation be removed, and the progress of the infection arrested at any stage. This infection will vary in degree and character according to the amount of pressure, the length of time it continues and the virulence of the organisms present. That this occlusion may be temporary seems practically self-evident when we study the pliability of the plug and the distensibility of the constriction.

Various experiments have been made by Roux,[6] Beausenat,[7] Nicolayson[8] and others to produce appendicitis in animals. However, a careful search in the voluminous literature of the subject failed to bring to light any exposition of what my own cases had led me to consider the true cause of appendicitis, and the following experimentation was begun. Dogs were selected for the experiments because they are easily obtained and handled, and because their appendices more nearly resemble the human than do those of herbiverous animals. Most of the work was done at the Hendryx Laboratory in Los Angeles, which was placed at my disposal through the courtesy of Dr. Stanley P. Black, and I feel that whatever success has been achieved is in no small measure due to his kindly suggestions and encouragement. I am also under many obligations to Dr. E. L. Leonard for her readiness to assist and for her caring for the specimens.

EXPERIMENTS.

EXPERIMENT 1.—Medium-sized dog. Ether. Aseptic abdominal section. The appendix was brought up out of the incision. A silk ligature was passed by a needle around the appendix at its junction with the colon in such a manner as to exclude the principal blood vessels from its grasp. This ligature was not placed so distinctly subperitoneally as was done in the succeeding experiments, but the results showed that the circulation of the appendix had not been interfered with by it. Before this ligature was tied, an aspirating needle was passed into the colon about 1 cm. proximal to the ligature and made to enter the appendix through its opening into the bowel until its point was well within the free cavity of the appendix. The ligature was now tied with one knot just tight enough to close the appendix at its "valve of Gerlach" about the needle. The needle being connected with a reservoir, a compression bulb and mercury manometer, ordinary tap water was forced into the appendix until the manometer registered 150 mm. The appendix held about 4 ounces before that point was reached. After holding the pressure at this point for a few minutes to make certain that distention was complete, the needle was withdrawn, while at the same time the ligature was drawn tight and double tied, retaining the water at a pressure of 150 mm. The appendix was returned to the abdomen and the wound closed and sealed with collodion. After 24 hours the dog was again anesthetized and the abdominal wound opened. The peritoneum was much injected in the neighborhood of the appendix and wound. The circulation in the appendix seemed good. The color of its peritoneum was about the same as that of the colon and ileum in the near neighborhood. A decided necrosis of the tissues enclosed within the ligature placed about the appendix had taken place, and fluid was escaping from the appendix at this point. This was producing an infection and the general injection of the surrounding peritoneum. The dog was now killed and the appendix removed, together with about two inches each of the colon and the ileum. The appendix was laid open and the principal effect of our experiment was found in numerous small ulcers the size of a pinhead distributed over the entire mucous membrane, no portion the size of a centimeter square being free from them. Evidently the mouths of the glands had become infected and broken down.

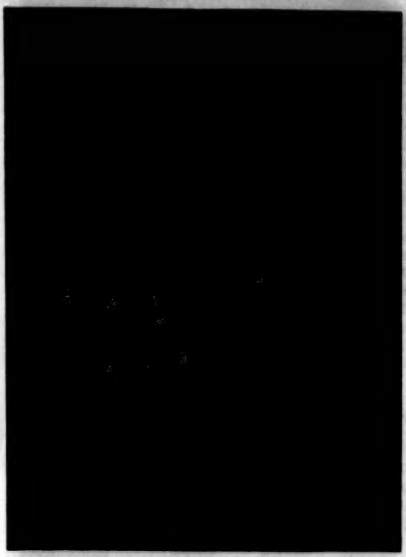

Fig. 1.—Experiment 2. Specimen 2. Entire appendix inflamed and contracted. I. Ilium. A. Appendix. C. Colon. Photograph taken six months after preservation by Kaiserling method.

EXPERIMENT 2.—This dog was submitted to the same operation as in Experiment 1, excepting that the ligature about the

5. Dieulafoy: Pathologie interne, 1898, or Clinic at the Hotel Dieu, Paris, 1899-90.
6. Roux: Congrès de Chirurgie, 1894, Lyon.
7. Beausenat: (Paris) Bulletins de la Soc. Anatomique de Paris, 1897.
8. Nicolayson, J.: Nordiskt Medic. Ark., Stockholm, 1901, vol. xxxiv, H. 4, No. 24.

appendix was passed as truly subperitoneally as possible, and 10 mm. of a broth bouillon culture of a mixture of *Bacillus coli communis* and *Streptococcus albus* was injected with a hypodermic syringe, the needle being passed alongside of the aspirating needle, used as in Experiment 1, the point of entrance being the colon and the track of the needle being closed by the ligature. This was done to insure the presence of pathogenic germs. The ligature was tied and the ends left long were passed out through the abdominal wound. The wound was now closed, two of the sutures having but a single knot so as to facilitate reopening the wound in a couple of hours. The blood tension in the femoral artery during this time was 175 mm.

Three hours later the wound was reopened, the appendiceal ligature pulled out and cut, releasing the appendix from its distention. All sutures were now securely tied and the wound sealed with collodion. Twenty-four hours after the operation the dog had a rectal temperature of 102.5. He was killed with ether and the abdomen opened. Typical appendicitis in an early stage was evident (Fig. 1).

Fig. 2.—Experiment 6. Specimen 5. I. Ilium. A. Appendix. M. Mesentery. C. Colon. Photograph six months after preservation by Kaiserling method. Dark discoloration of appendix shows general inflammation.

EXPERIMENT 3.—This was the same operation as in Experiment 2, except that the distention was carried to a pressure of only 130 mm. and left for only 2½ hours. This appendix held only ¾ of an ounce. After 24 hours this dog was very lively; temperature was 99.5. There was less severe inflammation, but specimen presents just as typical a picture of appendicitis. The sphygmomanometer registered 190 on the thigh of this dog.

EXPERIMENT 4.—Simple subperitoneal ligature of the appendix without distention. No reaction in 48 hours.

EXPERIMENT 5.—Same dog as in Experiment 4. At the first operation a silk suture was simply passed subperitoneally as in previous experiments and tied tightly. The appendix at this time was 7 inches long and one inch in diameter, and considerably distended with gas. Nothing was injected into it. The day following her rectal temperature was 101 at 11 a. m. and also at 8 p. m., but she was on her feet most of the day, and did not appear ill. The morning following this, 48 hours after operation, her temperature was 99, and she was lively. The wound was reopened under ether. The appendix was collapsed and to gross appearances entirely normal. The site of the ligature was entirely covered with reparative lymph. Gas could easily be passed from the colon to the appendix and vice versa. The appendix was again surrounded with a silk ligature just distal to the point of the former application. The appendix was now distended to 150 mm. and left so distended, as in former experiments, for 3½ hours. After the 3½ hours had elapsed, her temperature was 97.4. The wound was again slightly opened and the appendix found still distended. The appendiceal ligature was cut and removed, and the abdominal sutures securely tied and the wound sealed with collodion. Next morning the dog's temperature was 101 and at 8 p. m. 102. At this time, 36 hours after the second operation, she was chloroformed until dead. The abdomen, opened, revealed acute appendicitis in an early stage.

Fig. 3.—Experiment 7. Specimen 6. I. Ilium. A. Appendix. C. Colon. Experimental appendicitis. Appendix contracted by inflammation involving the entire organ beyond the ligature.

EXPERIMENT 6.—The operation was done as before, the distention pressure being 130 mm., though the ligature was not removed until after 3 hours; the pressure was probably not kept up more than one hour, judging by the actions of the dog and the collapsed condition of the appendix at the time the ligature was removed. There must have been a leak through or by the side of the ligature. After 48 hours the temperature was 102.4. Dog killed by chloroform. The appendix was

found typically inflamed and contracted with numerous adhesions to the intestines and omentum (Fig. 2).

EXPERIMENT 7.—Simple distention of appendix after ligature to 130 mm. for 2½ hours. Result, appendicitis (Fig. 3).

EXPERIMENT 8.—Injection of 10 mm. of culture *Bacillus coli* and *Staphylococcus albus* without distention. No reaction.

EXPERIMENT 9.—Appendix ligated and distended to 100 mm. and left 48 hours. Result, severe appendicitis.

EXPERIMENT 10.—Distention to 75 mm. Ligature. After 8 hours the wound was reopened and the appendix found collapsed, congested and inflamed. The ligature was not molested, but the appendix returned to the abdomen and the wound closed. Twenty-four hours after the operation the temperature was 99.5. The dog was killed with chloroform, and abdomen opened. The appendix was imbedded in a mass of adhesions by an inflammation of which it was itself the center. Its serous membrane was red, congested and inflamed. It was contracted down on a hard fecal mass plainly felt through its walls like a fecal concretion. Laying it open, it was evident that the ligature had cut into the tissues of the wall of the appendix sufficiently to allow the opening into it to become patulous, though not cutting quite through the

Fig. 4.—Experiment 10. Specimen 8. Ilium and colon laid open. Appendix inflamed and contracted, showing fecal ball held by constriction at site of ligature. Divided ends of ligature indicated at L L.

mucous membrane. The fecal mass previously felt now showed itself a hard dry lump composed of the compressed feces present in the appendix on the previous day when the ligature was placed (Fig. 4). It illustrates well the origin of the fecal concretion as I have outlined it elsewhere. The contracting appendix had driven off all the fluid into the colon. We need only to imagine more time—days, weeks, months, years—and the decomposition of the organic matter in this mass and the addition of more material from time to time would do the work of forming a concretion.

These ten experiments may be divided into the following five groups:

Group 1. Attempted permanent subperitoneal ligation of the appendix with distention to various degrees of pressure. Experiments 1, 9 and 10.

Group 2. Temporary subperitoneal ligation of the appendix with distention to various degrees of pressure. Experiments 5, 6 and 7.

Group 3. Temporary subperitoneal ligation with distention and injection of cultures of pathogenic germs. Experiments 2 and 3.

Group 4. Simple subperitoneal ligation of appendix. Experiment 4.

Group 5. Simple injection of cultures of pathogenic germs into the lumen of the appendix. Experiment 8.

Group 1 was done with the object of testing the possibility of inducing appendicitis in dogs by distending the appendix and producing a pressure within it equal to or just exceeding that of the arterial supply of the appendix. The normal blood pressure in the large arteries in dogs ranges from 90 to 160 mm., being about equal to that in the human being. Aiming as near these figures as possible, we applied 150 mm. pressure to the first case, 100 in Experiment 9, and 75 in Experiment 10. The attempt was made in this group to retain these pressures permanently. In this we failed in each case, because after a few hours the ligature had cut through enough tissue to allow a leak to occur and thus to relieve the tension. A permanent occlusion ought to produce a perforating or gangrenous appendicitis, but on account of this cutting of the ligature the manner in which this process in the human appendix can be imitated is very difficult. However, this demonstration is not very important, since if our results after temporary occlusion can be accepted as demonstrating the cause of mild appendicitis the frequency of permanent occlusion in the human appendix is sufficient demonstration as to the cause of the perforative and gangrenous cases.

In Group 2 pressures were induced in Experiment 5 of 150 mm.; Experiment 6, 130 mm.; Experiment 7, 130 mm., and the ligature removed in two and one-half to three hours. The resulting inflammation in all these cases, as well as in those of Group 1, demonstrated that infection will take place promptly from the pathogenic germs present, even in the healthy appendix of a dog, if that appendix is subjected to an intra-appendicular hydraulic pressure equal to or slightly exceeding the blood pressure in the arteries, even if this pressure is maintained for only a short time. The weight of these demonstrations is enhanced by the striking identity of the picture of these results and those of ordinary acute appendicitis in a correspondingly early stage, as we see it daily in the operating room.

In Group 3, cultures were introduced to make certain that the appendix contained pathogenic germs, for manifestly that is the all-important factor in any infection. The result was a slightly more severe type of inflammation.

In Group 4, Experiment 4 was done in the hope of obtaining a permanent occlusion and subsequent filling up of the appendix from the retained secretions. The uselessness of this attempt is now very evident on account of the cutting of any ligature placed for this purpose.

In Group 5, Experiment 8 was done as a control of 2 and 3 to show that simple injection of virulent germs into the appendix does not produce infection. This is in line with some of the experiments of Beaussenat and of Roger and Josue,[9] who report the same failure of results.

Let us compare this view of the cause of appendicitis with those most commonly accepted. Anything like a complete review of the literature on the subject is out of the question here. The articles written about appendicitis number up into the thousands. Dr. J. B. Murphy[10] summarizes the etiology as follows:

9. Roger and Josue: Rev. de Med., Paris, 1896, vol. xvi.
10. Murphy, J. B.: Practical Medicine Series, November, 1903.

We are agreed that the etiologic factors of appendicitis are:

1. A local irritation caused by a foreign body, as a fecal concretion, a catarrhal congestion of the appendix due to the conditions which produce similar changes in the neighboring bowels, stercostasis in the appendix, traumatism, etc.

2. The inoculation on this abraded mucosa of pathologic flora as the staphylococcus, streptococcus, pneumococcus or colon bacillus.

The consequences of this infection are the many pathologic conditions which are present in acute inflammatory process.

This fairly represents the consensus of opinion on the matter as I read the voluminous literature on the subject, but that it is not a fully satisfactory explanation is shown by the multiplicity and variety of other explanations offered. A list of thirty-nine different explanations was compiled during our search of the literature.

This theory seems to overlook the difference in character of the infection here and in any other part of the alimentary canal.

To produce a necrosis, an infection must be so severe as to produce cell necrosis by the character or virulence of the germ, or it must continue long enough to accumulate inflammatory products which by pressure on the blood vessels produce the necrosis (Senn). Neither of these conditions prevails in appendicitis.

The striking tendency to necrosis and gangrene early in appendicitis point to a mechanical interference with the blood supply. Nearly all pathologists speak of the changes in the blood vessels. I need mention only Fowler, Deaver and Ochsner.

To establish the universality of the two essential factors, the constriction and the occluding mass, may be difficult from the data now on record, but the constant reference to them by writers and the prominence they have maintained in the discussions of the cause and pathology of the disease, speak for their frequent, if not for their constant, presence.

I have never seen an appendix which presented evidence of inflammation, past or present, which did not present a constriction in some part of its lumen. A very slight narrowing may be sufficient to moderately distend the appendix for a short time. A hard fecal mass may be a long time passing a bend or kink in the lumen. These irregularities increase as bowel contents enter and are forced out. The recurring distention tends to produce pouching beyond anything acting as a constriction, a kink or bend, a short mesentery, etc. This is explained in detail by R. Abbe.

The frequency of the obstructing body has been the subject of much more study. Aside from soft or firm fecal matter, which must be conceded to be always possibly present, the prevalence of foreign bodies and fecal concretions is common knowledge.

Mitchell[11] collected 1,400 cases from various sources in the last ten years and found about 7 per cent. of true foreign bodies; while in 700 of these cases, in which a definite statement was made as to the nature of the foreign body, there were 45 per cent. of fecal concretions. Fitz, in 1886, collected 152 cases of perforative appendicitis and found 12 per cent. foreign bodies, with 47 fecal concretions. Talamon, 760 cases, 450 foreign bodies or concretions, nearly two-thirds of the cases. Hartley adds: "Is it unreasonable to assume that the other third had escaped into the colon after temporarily obstructing the lumen?"

11. Mitchell, James F., The Johns Hopkins Hospital Bulletin, Baltimore, 1899, vol. x.

However, a concretion is not essential. Any fecal mass may become sufficiently firm to be packed into a constriction and temporarily occlude the lumen. Such an obstruction will the more easily give way because it is pliable. Beside, there are putrefactive changes always going on in it, favoring the giving way of the obstruction once the valve is closed.

The determination of the source of the fluid with which the appendix is distended is an interesting and important problem. Much of it and sometimes all of it must come from the effusion into the canal from the engorged blood vessels of the mucosa, together with the secretions from the glands.

Hemmeter says: "If the obstruction is complete, abundant secretions accumulate and are readily decomposed in the presence of numerous putrefactive bacteria. The walls of the appendix are excessively distended and the mucous membrane is strongly irritated, both mechanically and chemically."

Blood is pumped into the appendix under a pressure of 90 to 170 mm. The capillaries and veins are compressed against the fibromuscular walls, and in whole or in part occluded. The blood stream is slower than normal and effusion must take place. With every drop of effusion the intra-appendicular pressure rises and the occlusion of the blood vessels becomes more complete. This process continues until the pressure in the arteries and in the canal of the appendix becomes equalized. Blood has been pumped into the appendix, but was prevented from escaping through its ordinary channels, and must be retained there. Formation of gas in the appendix may add materially to the degree and rapidity of the distention.

The sudden onset of many acute cases, such cases so often referred to as due to trauma, an acute indigestion, violent exercise or constipation, seems to indicate that at times at least the initial distention is produced by a sudden increase of pressure in the colon, forcing an unusual amount of fluid into the appendix, which is held there by the fecal mass or concretion suddenly rebounding, closing the ball valve. The ease and perfection with which this maneuver may be carried out with the appendix shown in Figures 5 and 6, is confirmatory of this idea. Once the occlusion established, the previous process of effusion continues to increase the pressure.

The following cases illustrate this sequence—constriction, obstruction, distention, pressure on blood vessels, infection, and gangrene and perforation:

CASE 1.—E. R., male, aged 22. Taken suddenly on the evening of March 24, 1903. Kept in the house the 25th and went to bed that afternoon. Pain quieted down that evening and was very moderate all the next day. That day he attended a picnic, and, being an athlete, he did considerable jumping. Came to me that midnight with severe pain. The morning of March 27 pain very slight, but decided tenderness on pressure. Operation 10 a. m., 60 hours after onset, 20 hours after last exacerbation. Appendix found distended to an extreme degree, "as full as it would hold." "Feared it would pop open before it could be removed." Closely examining it after removal one easily caught the greenish tinge of approaching gangrene of the entire organ. A concretion the size of an orange pit was easily palpated, blocking a tight constriction, at the proximal end. Pushing this back released the fluid and the tension was immediately relieved. Infection had not extended beyond the walls of the appendix. The patient made an uneventful recovery.

I used this appendix in my first experiments on this subject, as shown in the illustrations (Figs. 5 and 6). It was possible, with the aid of the bulb syringe, to dis-

tend it fully and, the valve closing, this tension was maintained by the recoil of the fluid on the concretion, forcing it into the constriction, the ball valve causing appendicitis.

To my mind, the life history of that appendix was as follows: At birth the appendix was slightly club-shaped. The lumen was a trifle narrower at the juncture with the cecum than at some point distal to it. For years fecal particles accidentally passing into it would be easily expelled, as the constriction was so slight as to offer no real impediment to its exit. In time a little accumulation of fecal matter occurred and slightly distended the walls until it took some effort on the part of the appendix to expel it. Repeated occurrences of this kind developed an increasing distention of the appendix and a relative narrowing of its lumen at its already narrowest point. In time the passage of such a fecal bolus irritated the mucous membrane at the narrowed point—perhaps by stretching and causing

Fig. 5.—The "ball valve" action of a concretion causing appendicitis. The appendix ready to be filled from the bulb.

microscopic injury. Slight local infection and resulting inflammation contracted the lumen at this point and produced a more decided constriction. This constriction following mild inflammation of the appendicular mucosa, was studied and described by R. Abbe.

A repetition of this process continued until the constriction presented a decided obstacle to the exit of fecal contents. The fluid portion of the bolus was, however, constantly expelled or absorbed. Inorganic matter remained as the principal constituent of the mass, which constantly grew by accretion, and a fecal "concretion" resulted. It may have been so much reduced in size during a period of time when little or no fresh mass was forced into the appendix that it easily escaped into the colon without producing a symptom. More than likely, however, at some time it caused enough obstruction to its exit to produce an occlusion. Distention with fluid followed, partly perhaps by some sudden increase of intracolonic pressure forcing it into the appendix—the concretion or fecal mass dropping into the constriction and retaining the fluid there as would a ball valve. At any rate, the secretions from the mucosa being prevented from leaving the closed cavity accumulated, whether the initial distention came from the colon or not. The increasing pressure, the appendicular contractions, the distensibility of the constriction, and, if still pliable, the molding of the mass,

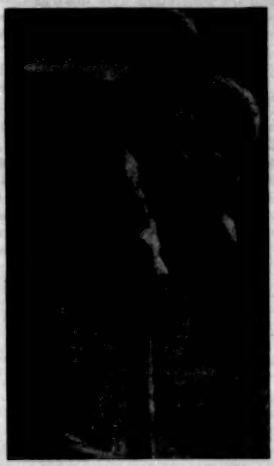

Fig. 6.—Same as Figure 5, filled and with the "ball valve" closed, retaining the fluid under pressure.

one or all of these factors caused the obstructing body to pass the constriction in a short time. Meanwhile, the capillary and venous circulation had been compressed, and more or less bacteria had gained entrance into the tissues, causing more or less infection and inflammation. Some bacteria entered through follicles unduly opened by the distention and others through

Fig. 7.—Specimen from Case 2. Distal extremity dilated (D) beyond constriction (C). Concretion occupied dilated portion.

microscopic traumatisms, but the important condition which allowed infection to occur was that the tissues were temporarily deprived of their life fluid, the blood, without which no tissue can long withstand the attack of its germ foes. The result of this temporary obstruction in the appendix was a mild attack of appendicitis,

producing so little pain and discomfort that it passed unnoticed or as a colic or as a bilious attack. Patient remembers long nights with "stomachache" when a boy, even when a student in the high school. Some of these were probably mild attacks of appendicitis and may have been repeated a number of times.

Coming now to the time of his final attack, the constriction and the concretion were there as demonstrated by the specimen. The history of their production I have attempted to sketch. On Tuesday evening the "ball valve" was closed, accidentally (?). It may have been from increased intracolonic pressure or by his position at night the concretion may have dropped by gravity into the constriction and the secretions accumulating behind it held it there firmly. The valve once closed and the fluid accumulating behind it, more and more pressure on the blood vessels of the mucosa and submucosa followed, and some infection became established. During Wednesday the valve must have been opened by the concretion falling back into the appendix, or by some misfit it was allowed to leak a trifle at a certain pressure for the patient had comparatively little pain that afternoon and night. The next morning (Thursday) he felt well enough to attend a picnic with some of his pupils. Being of an athletic turn, he engaged in various feats of rowing, running and jumping, and even cleared a table at one bound. His pain had been slight during the day, though always present, but after this last feat his pain increased decidedly. What better explanation can be offered than that with this extra muscular effort there was unusual compression of the colon, fluid was forced into the appendix under great pressure and the valve again closed, this time for good? The pressure on the blood vessels and effusion began at once and continued until the pressure in the lumen of the appendix equaled that in the arteries, as already described. Pain increased until midnight, by which time the obstruction to the arterial blood current had become complete and gangrene began. From this time on the pain subsided, as the nerves producing it gradually succumbed to the advancing gangrene.

The intra-appendicular pressure, once established, must of necessity be maintained until something gives way. A greater distention of the walls will only allow a little more fluid to enter from the arteries. Had the constriction been less firm or the concretion smaller or more easily molded, it might have been forced open, as it had perhaps done before or as it undoubtedly often does even at such a late hour that complete gangrene of the appendix is already established, and at operation we find the gangrene, but the concretion has passed out of sight into the colon, the obstruction is gone, and we wonder at the wonderfully acute infection which in twelve to thirty-six hours produces gangrene of the entire appendix. Ochsner reports such cases as I have already mentioned.

CASE 2.—M. V. Z., aged 15. Since February, 1899, she had three or four mild attacks of typical appendicitis. Each time the pain came on suddenly and left suddenly within a few minutes or hours, leaving only a tenderness in the region of the appendix for one to four days. The last attack occurred about Jan. 1, 1902. The pain came on suddenly, was severe, but subsided after about 45 minutes. After that there was decided tenderness to pressure and slight tenderness when turning about, but no further decided pain. The temperature reached 100 within the first few hours, but did not exceed the normal point after that. In three days she was perfectly well. Three weeks later, January 25, the appendix was removed, and is shown in Figure 1. The constriction was found about one inch from the distal extremity. The distended cavity beyond was entirely empty, as shown in the cut. That cavity must have contained a concretion or fecal mass. The cavity became suddenly distended, the constriction obstructed, and the pressure on blood vessels and nerves decided. Fortunately, the obstruction was forced out through the constriction before serious infection or gangrene had time to develop. Some infection had taken place, however, as the clinical history and the pathology of the specimen are evidence of a typical so-called catarrhal appendicitis.

CASE 3.—Miss C. F. B., aged 24. I saw the patient at 4 p. m. Sept. 16, 1903. During the preceding night she had been taken with pain, which had gradually increased in severity. Operation was advised, and was begun at 10 p. m. The appendix was found fully distended and omentum slightly adherent, especially at the distal end. Removing the adhesions revealed two dark gangrenous spots. The degree of distention in this case was an interesting study. I know of no way to measure or record it. But having just recently completed my experiments on dogs I had some idea of pressure measured by the manometer, and I do not hesitate to say that it exceeded 100 mm. and, perhaps, 150, at least enough to seriously interfere with the blood supply. The concretion and stricture which caused the obstruction were situated about midway between the point and the proximal end of the appendix.

These cases are just such as are constantly seen in the operating room, and are cited simply to show how their history, especially of pain, fits into this view of the pathology. Had Cases 1 and 3 been left until perforation had taken place, all evidence of the actual cause of the appendicitis would have disappeared and the blood vessels would have given no account of the force which had compressed them. Thrombi would have been present in their lumen, but this simple mechanical explanation of their production would have passed out of evidence.

Appendicitis must be looked on as at first a true strangulation—pressure on the blood vessels. This theory explains the suddenness of the onset, especially if we allow that the first distention and closure of the valve is produced by increased colonic pressure. The sudden cessation of acute pain so often observed is explained by the giving way of the obstruction and the gradual cessation of pain by the advent of gangrene.

The severity of the pain (if only we could measure it) and the length of time it continues should be a valuable indication of the severity of the inflammation likely to follow, especially if it comes suddenly and leaves suddenly. If the initial pain of appendicitis is due to a simple infection, why does the pain so frequently subside after a few minutes or hours while the infection continues to extend? In this connection a sharp distinction must be made between pain and tenderness. Pain before the inflammation has extended to the peritoneum (usually eighteen to forty-eight hours) means distention still present, especially if accompanied by colic, which means attempts at extrusion and peristalsis extending to the intestines. Tenderness before the peritoneum is involved without decided pain (a condition so common after a few hours, three or four, to twenty-four or forty-eight) is evidence of congestion or inflammation confined to the appendix. The recurrence of pain after this lull is almost invariably rupture and extension to the peritoneum. The careful study of the history of pain and tenderness in any case furnishes the most important evidence we have of the exact conditions present.

If appendicitis is at first strangulation, the importance of early operation, before the inflammation

reaches the peritoneum, can not be too strongly emphasized. In some cases the evidence of the early giving way of the obstruction may be sufficiently positive to admit of a diagnosis to that effect and an assurance of a mild attack that will not require an operation until "the interim." But this decision must rest on the most positive evidence after a painstaking study of the history and present condition of the patient. With such positive evidence furnished by Case 2, I believe that plan justifiable. But when in doubt, operate before perforation has taken place.

CONCLUSIONS.

1. Simple infection does not account for the suddenness of the attack nor early severity of the pathologic changes in acute appendicitis.

2. The evident interference with the blood supply is best accounted for by an increased intra-appendicular pressure.

3. Simply injecting bacteria into the appendix will not produce appendicitis unless used in abnormal amounts and virulence.

4. Subperitoneal ligation of the appendix with a simple ligature without distention can not be made sufficiently permanent to produce a general infection of the appendix, typical of appendicitis in the human being.

5. Experiments in dogs show that hydraulic pressure equal to the arterial tension maintained within the lumen of the appendix for a short time is promptly followed by typical appendicitis.

6. The blood supply in an extremity may be cut off with impunity for hours; but in the appendix the ever-present bacteria at once begin an infection, their entrance into the tissues being facilitated by the opening of normal and traumatic avenues by the very distention which cuts off the circulation.

7. The importance of making a complete diagnosis and prognosis during the first twelve hours of the attack is emphasized.

8. This study suggests the possibility of infections or other lesions being produced in other hollow viscera, especially in the gall bladder, the stomach and intestines by temporary overdistention.

Clinical Reports.

LEUKEMIA.

REPORT OF A CASE SYMPTOMATICALLY CURED BY THE X-RAY.

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Introduction.—A case of splenomedullary leukemia successfully treated by the use of the Roentgen ray is reported by Senn.[1] In looking up the literature at my disposal, which includes the *Index Medicus*, I fail to find any further reports of cases thus treated.

At the time of the appearance of Senn's report, the patient, whose history I give below, had been under *x*-ray treatment for seven weeks.

From the time of the first recognition of this disease a fatal termination has always been expected, yet it is known that occasionally recovery occurs, or there is an apparent arrest, either spontaneously, or after the use of arsenic; hence in recording the effect of any treatment of leukemia the word "cure" must be used with caution. Although an examination of my patient to-day would show an entire absence of every symptom of the disease, both by physical and blood examination, where seven months ago a most pronounced case existed, yet only time will show the permanency of the result.

I submit this as a preliminary report, and will later collect other cases so treated, and will give a more detailed history of this one, with charts and plates showing the blood findings.

Patient.—W. E., male, American, aged 30, a cigar maker, unmarried; was first examined July 1, 1903. His family history is negative, except that one sister has had tuberculosis.

History.—The patient has lived in Decatur all his life; his habits have been good, he does not use alcohol, but he is a moderate smoker. He has had the usual diseases of childhood, with good recovery in all. No history of malaria or syphilis.

Present Trouble.—The patient came to the office complaining of weakness, pain in the back and a feeling of weight and distress in the left side. Two years ago he had a fall, alighting on lower ribs of left side, which compelled him to stop work for two days. He has had a slight cough for some time. For six months he has been troubled with palpitation, dyspnea and slight headaches. Lately he has noticed that his shoes fit tighter at night. He becomes very weak on exertion.

Examination.—The patient is moderately well nourished, but has a somewhat cachectic appearance. His present weight is 160 pounds, which is his average summer weight; his expression is depressed; mind clear; frame medium sized; musculature

Splenomyelogenous leukemia. Photograph showing size of spleen before treatment and after four months' treatment.

soft; panniculus thin. He is slightly anemic. The visible mucous membranes are of fair color; tongue is moist. There is slight edema of ankles and legs. The lymphatic glands are not enlarged, but the inguinal glands are easily palpated. The thorax is of good size and symmetrical; expansion fair. On percussion, one finds good resonance, the lower lung boundaries normal and descending well; heart sounds are normal; the liver dullness extends to the edge of the ribs, and its thin edge is easily felt. Splenic dullness begins on the seventh rib in the mid-axillary line and extends two fingers' breadth below the navel in the left mammary line. To the right it extends one finger's breadth beyond the median line. On palpation the spleen is a hard, smooth, thick mass. No notch can be felt. The radial pulse is easily compressed, is moderately full and regular, with a rate of about 90. Temperature is 99.

Examination of Fluids.—The urine gives a slight precipitate with heat and acid, and a few hyaline casts are found in the sediment. The blood examination, made by my associate, Dr. C. M. Jack, is as follows: Red blood corpuscles, 2,600,000; leucocytes, 800,000; hemoglobin, 65 per cent.; specific gravity, 1,050. On staining with Ehrlich's triple and Janner's stains, the reds show a slight paleness, slight poikilocytosis and many nucleated forms. The differential count of the leucocytes gives: Polymorphonuclear, 40 per cent.; myelocytes, 40 per cent.; eosinophiles, 8 per cent.; large mononuclear with basophilic granules, 8 per cent.; degenerates, 4 per cent.

1. New York Medical Record, Aug. 22, 1903.

Clinical Diagnosis.—Splenomyelogenous leukemia.

Treatment.—The patient was informed of his condition and advised to stop work. I gave arsenic and iron internally and *x*-ray treatments to the splenic region twice a week.

Course.—After one month the patient seems improved; feels stronger, and his appetite is better. On examination the spleen is apparently smaller, the right edge extending only to the sternum and the lower edge on a line with the navel. The ankles are still swollen, but the blood shows a marked decrease in the number of leucocytes with a slight increase in the red blood corpuscles and in the amount of hemoglobin. Blood smears show an apparent increase in the transitional forms with decrease of myelocytes. The normoblasts are markedly increased. Differential counting is unsatisfactory owing to the large number of forms lying on the borderline between the myelocytes and transitional forms. The urine still contains a trace of albumin.

September 1: The patient has returned to work. His general condition is improved; appetite good, with a gain in weight. The spleen has decreased in size and a notch is felt for the first time. Edema of ankles is less. Blood: leucocytes decreased to 58,000, with an increase in the red blood corpuscles to over 3,000,000.

Encouraged by the results of treatment, which had varied very little in the last two months, and by Senn's article which appeared at this time, it was decided to discontinue the iron and arsenic and to increase the frequency and distribution of the *x*-ray exposures. These treatments were now given daily to the splenic region, the ends of the long bones, and to the sternum. In place of the iron and arsenic, one grain capsules of quinin, three times a day, were given as a placebo.

October 4: The patient has not missed a day's work in the last month. The blood shows an increase in the number of leucocytes; the number of red blood corpuscles and the amount of hemoglobin, however, still show an increase. The spleen can be pushed to the edge of the ribs. An *x*-ray dermatitis of the splenic region has appeared once or twice, the outer layers of the skin desquamating, but by discontinuing treatment for a few days and using a dusting powder, no bad results have followed. The skin over the exposed surfaces was rough at first, but after exfoliation has become smooth again. The hair and pigment have disappeared from the parts exposed.

November 9: Blood: leucocytes, 129,000; red blood corpuscles, 4,124,000; hemoglobin, 85 per cent. Very little variation in size and shape of the red blood corpuscles and no nucleated forms were found. Myelocytes, 25 per cent.; polymorphonuclear, 60 per cent.; eosinophiles, 5 per cent.; small lymphocytes, 1 per cent.; degenerates, 3 per cent.

December 6: Leucocytes, 44,360; red blood corpuscles, 4,360,000; hemoglobin, 85-90 per cent.; myelocytes, 20 per cent.; polymorphonuclear, 74 per cent.; eosinophiles, 1 per cent.; small lymphocytes, 2 per cent.; degenerates, 3 per cent.

January 9, 1904: Leucocytes, 17,825; hemoglobin, 90 per cent.; red count not taken. Myelocytes, 8 per cent.; polymorphonuclear, 88 per cent.; basophiles, 2 per cent.; small lymphocytes, 4 per cent.; degenerates, 1 per cent.

February 13: Leucocytes, 10,980; red blood corpuscles, 4,600,000; hemoglobin, 90 per cent.; polymorphonuclear, 86 per cent.; small lymphocytes, 8 per cent.; basophiles, 1 per cent.; transitional forms, 2 per cent; degenerates, 3 per cent. The albumin has entirely disappeared from the urine. The patient's weight to-day is 182 pounds, more than he has ever weighed before. Spleen can only be felt on deep palpation and on deep inspiration. Treatments are now reduced to every other day, the patient taking long walks on the intervening days.

February 20: Leucocytes, 7,894; red blood corpuscles, 4,690,000; hemoglobin, 95 per cent.

The accompanying table shows the remarkable reduction of leucocytes. It shows the first reduction when patient was taking both the arsenic and *x*-ray treatment, then the increase in the white cells when the arsenic was discontinued and the subsequent decrease to normal after *x*-ray treatments were given alone.

	LEUCOCYTES.	TREATMENT.
July	1..... 800,000	Arsenic and *x*-ray.
Aug.	1..... 180,000	
Sept.	1..... 58,000	*X*-ray alone. Arsenic discontinued.
Oct.	4..... 104,000	*X*-ray alone, daily treatments.
Nov.	9..... 129,000	
Dec.	6..... 44,000	
Jan.	9..... 17,825	
Feb.	13..... 10,980	
Feb.	20..... 7,894	

A CASE OF PSEUDOLEUKEMIA SUCCESSFULLY TREATED WITH *X* RAYS.

OSCAR W. STEINWAND, M.D.
Member American Association for the Advancement of Science.
SELMA, CAL.

Patient.—Miss L. N., aged 15, school girl. Family history: mother died from heart disease two years ago; father well; 3 brothers, 2 well, 1 has chronic stomach trouble; 3 sisters, all well. No tubercular or syphilitic history.

History.—About five or six years ago she noticed that the glands on the left side of the neck became enlarged, but not painful. During the succeeding three years they increased slowly but gradually, and there were occasional sharp pains on left side of abdomen (site of spleen). These were of a lancinating character and of momentary duration. Certain nervous symptoms made their appearance: inability to concentrate her thoughts on her studies, sleeplessness and pains in her legs, the latter causing some unsteadiness of gait. Her disposition likewise suffered, changing from a bright cheerful tone to one, at times, bordering on melancholy. Two years ago the glands along both borders of the sternocleido muscle began to coalesce and to make more rapid progress in size. The supraclavicular glands also became prominent, and in due time also the axillary glands were involved.

The patient came to me for treatment April 1, 1903. She presented all the symptoms above enumerated, with rapidly increasing nervous phenomena and steady loss of weight. All the treatment she had received had had absolutely no effect toward checking the disease. There had not been any definite diagnosis. Some had suggested entire removal of the diseased glands, but her parents would not consent.

Examination.—There were large glandular masses on the left side of the neck, anterior and posterior to the sternocleidomastoid muscles, the larger ones about the size of a hen's egg. They were movable under the skin, but bound down more or less to the deeper structures. The supraclavicular and epitrochlear glands were likewise affected.

The spleen was somewhat enlarged and tender to pressure. Temperature was 100 to 101 degrees. The hemoglobin index was 70 per cent. The differential leucocyte count was negative. I failed to make a blood count. The pulse was 115 to 120. At no time did I detect the temperature lower than 100 degrees or the pulse rate less than 102.

Treatment.—Under the use of Fowler's solution for three weeks the patient rapidly grew worse. April 20 I advised the use of the *x* rays, and gave the first exposure, eight inches from the surface of the neck. The neck measured 13½ inches over the most prominent portion. I made one exposure each day, of a duration of fifteen to twenty minutes. After the exposure on the second day, the patient complained of feeling much worse. The temperature now registered 104.5, the highest it had been at any time. The following morning it was again 102, and remained so until one-half hour after the exposure in the afternoon, when it reached the same mark as on the preceding day

Thinking there might be some latent malaria, I examined the blood, with negative results, and administered 12 grains of quinin per day for four days, but without any effect whatever. After the third exposure, splenic tenderness was greatly increased, so that gentle percussion caused considerable pain. The patient now felt so miserable (to use her own expression) that she kept her bed all day except at the treatment hour.

April 24 her neck measured 12½ inches and had visibly decreased in size. Two days later it measured 12 inches. The temperature was 103, the pulse 115.

April 27 I commenced giving Fowler's solution as a general tonic. On April 29 I stopped the quinin. The patient was feeling somewhat better and more cheerful. On April 30 the neck measured 11¾ inches. The supraclavicular glands were much shrunken and becoming hard, nodular and more freely movable under the skin. Temperature was 100, pulse 100.

May 1 I stopped *x*-ray treatment, as there was some evidence of burning. On May 5, temperature was 98.4; pulse 100, this being the first time I found temperature normal in three months' observation. The *x*-ray burn was now very evident, being of oval shape, about 2 inches wide by 4 inches long, with desquamating surface. There was some burning and itching, with alopecia on that side of the head. She felt much better and had gained four pounds in weight. The glands felt much harder and more nodular, and were loosening from the deeper structures. The pains in the legs had disappeared, but the knees still felt very weak when she stood any length of time. All nervous symptoms, tremor, etc., have disappeared.

May 12 the *x*-ray dermatitis was fully developed, and the skin was sloughing in places. The area of alopecia was somewhat increased. She had a keener appetite. The weakness in the knees had disappeared and she gained 2 more pounds in weight. The bowels had become regular. The temperature was normal and the tongue clear.

May 28 the *x*-ray burn showed signs of healthy granulations, and on June 3 skin grafts from the thigh were applied to the denuded area under medullary narcosis, which proved to be a very efficient and convenient anesthetic.

June 6 all grafts had united and the inflammatory condition subsided.

July 24 the glands were still receding, and the neck measured 11 inches. The contour fairly matched that of the opposite side. She stated that she felt in the best of health, and her appearance fully bore out her assertion.

Apparatus and Technic.—The current I obtained from a 16-plate static machine driven by hand. I used a Gundlach tube, taking a 4-inch spark gap. The target of the tube was placed 18 inches from the patient, with one treatment of twenty minutes' duration each day for the time stated.

Comments.—As treatment progressed, the spleen increased in size. This phenomena was noted by Senn in THE JOURNAL, but I have not seen any mention of the distinct rise in temperature after each treatment, encountered in this case. The only explanation that I can offer is that there must have been certain toxic products, liberated through the influence of the *x* rays, which were at once taken up by the circulation, causing also the acute exacerbations of ill feeling following each exposure. This condition of elevated temperature and ill feeling lasted from ten to fourteen hours, and was so severe at times that we both thought of abandoning treatment had it not been for the steady reduction of the size of the glands.

Present Condition.—At the present time, Feb. 22, 1904, all the formerly enlarged glands have receded to their natural size, but still retain their hard fibrous condition. The patient is and continues in the best of health, no trace of the disease remaining.

I intend to keep her under observation for some time, as it is too early to report a permanent cure. The result obtained has been very satisfactory, especially since the outcome of this disease, under the use of other therapeutic agents, has been almost invariably fatal.

New Appliances.

A SIMPLE CLUBFOOT RETENTION SPLINT.

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The treatment of a clubfoot should be commenced immediately after birth, when it can be cured by pressure. The lateral and then the anteroposterior element should be successively dealt with. In older cases where an operation of some sort is necessary, the complete overcorrection is best made at once. To partially correct such a case by operation, trusting to apparatus or body weight to complete the rectification, is to invite disappointment. For the clubfoot is not simply a misshapen foot. It is a clubfoot by reason of a peculiar distorting force which is actively at work in it. This force, if not overcome, increases rapidly. It is stimulated by unbalanced muscular movements, by weight bearing and frequently by the very measures which are employed for the cure of the case. For inefficient or intermittent resistance toughens clubfeet just as exercise strengthens normal muscles, ligaments and bones, but to a greater degree. Abnormal relations between bones induce abnormal shapes and abnormal internal structure. The correction of a clubfoot must be prompt and rapid to overtake the increasing rigidity. It must be excessive and long maintained, because of the inevitable tendency to relapse.

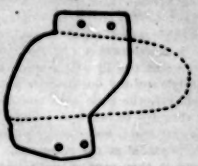
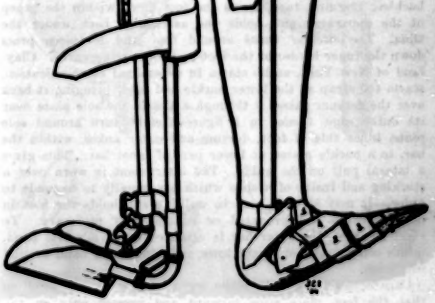


Fig. 1.—Pattern of footpiece. Dotted line shows outline of sole.

For the correction of the equinus in young subjects where the lateral deviation, if any, has been overcome, and where no operation is necessary, and also as a retention splint where the resistance to overcorrection has been eliminated by operation or otherwise, I employ the simple instrument here presented. Any tinsmith can make it from pattern and measurements furnished by the surgeon. It can be bent laterally as well as anteroposteriorly, into any required shape. It covers only those parts where pressure is needed. It has no joints to wear out. It is inexpensive. As compared with plaster of paris it has the following advantage: Being removable and capable of adjustment and modification, and the foot being accessible for examination, bathing, exercise and massage, one can apply more pressure than one would venture to use when the part is out of sight and reach. Rectification can therefore be more rapidly accomplished and nutrition is not so much interfered with.



Figs. 2 and 3.—Retention splint off and on.

The splint consists of a footpiece and calf band of galvanized iron or sheet brass, 22 gauge, and two side bars of telegraph wire, brass rod or Bessemer rod 3/16 inch in diameter. These dimensions are for a child of a year or under.

The footpiece is made from a tracing of the sole, as shown in Figure 1. It extends under the outer side of the sole sufficiently far back to make pressure on the cuboid and front of the os calcis. The posterior and inner parts of the sole are left uncovered so as not to interfere with the descent of the heel and arch. The footpiece extends upward on each side of the foot. If the foot is to be retained in a valgus position the inner lip is made higher than the outer.

The calf band is about 1¼ inches broad and extends half way around the limb posteriorly. It is placed as high as possible without interfering with the flexion of the knee.

The bars, being round, are pliable in any direction. They must be stiff enough to retain a given shape against the resistance of the foot. They are flattened at the ends where they are attached by two small rivets to the calf band and footpiece, and bent to the required angle of flexion. They should not be drilled except at the ends, because this would interfere with their modification.

Having made sure of the fit of the apparatus, it is covered and provided with straps and buckles. A piece of one-inch web long enough to encircle the limb with something to spare, and having a buckle attached to one end, is sewn or riveted to the outer face of the calf band, holes being punched for that purpose. The buckle is placed at the outer end. The whole splint, including the bars, is then covered with leather, or if that is not convenient, rubber plaster will serve, though it will require frequent renewal.

Cases of clubfoot present so much individuality that no hard and fast rule can be laid down for attaching the straps. Put them where they will be most effective and change them according to circumstances. In many cases of equinovarus, the following arrangement will be satisfactory: (Figures 2 and 3.) A heel strap of ¾-inch web is sewn from bar to bar so as to pass just above the tuberosity of the os calcis when the foot is at the maximum of flexion. This strap must be made shorter than needed, because it will stretch. A buckle is included with the outer bar. Another buckle is sewn to the outer bar just below it. A small iron or brass ring or a piece of wire with an eye in each end is secured to the inner bar at the bend. Starting at the upper buckle, a piece of web is passed across the instep (1) through the flattened ring, or under the wire, thence back (2) over the dorsum of the foot, and once (3) or twice (4) around foot and footpiece, to terminate in the lower buckle. The first turn draws the foot down within the grasp of the apparatus and holds the astragalus back under the tibia. The circular turns around foot and footpiece press down the inner border of the foot and correct the varus. Clayland of New York, as he states in a personal communication, starts the strap at the lower buckle and after bringing it back over the dorsum passes it through a slot in the sole plate near its outer edge, thence in a figure-of-eight turn around sole plate, inner side of foot, dorsum and outer ankle, within the bar, to a buckle placed at lower part of inner bar. This gives a lateral pull on the ankle. The instrument is worn over a stocking and inside of a shoe which has usually to be made to order. It may thus be used in walking and holds the foot in dorsal flexion and pronated or supinated if necessary. To evert the foot, the outer bar is extended up to a pelvic band, joints being provided at the knee and hip, and a band around the thigh.

Care must be taken that the heel strap does not stretch so that the foot plate slips forward and presses only on the metatarsals. The pressure should be exerted also on the cuboid and front of the os calcis.

Even after the foot has been allowed to assume a rectangular position for walking, it should be retained at night for a long time in a position the reverse of the deformity.

As here presented, this apparatus is not suitable for use where the lateral deviation presents marked resistance. It is, however, susceptible of many modifications, such as the attachment of pressure plates to any part of the bars.

In reducing the strength of an acid by water the acid should be poured into the water, not the water into the acid, and the mixture should be stirred during the pouring.

AN X-RAY TUBE WITH ADJUSTABLE FOCUS.

R. V. WAGNER, M.D.
CHICAGO.

If one examines the outline of a shadow from a light emanating from a large area—e. g., a gaslight—it will be seen to compare favorably with the outlines on a fluoroscope or on a picture, when the *x*-ray is used from a tube having the anode out of focus. On the other hand, the outlines of a shadow emanating from a small area—e. g., an arc lamp—resemble the outlines on a fluoroscope or on a picture, when an *x*-ray tube having a sharply focused anode is used (Figs. 1 and 2).

The *x*-ray emanates from the molecular bombardment of the rarefied air in the tube on the surface of the anode. The

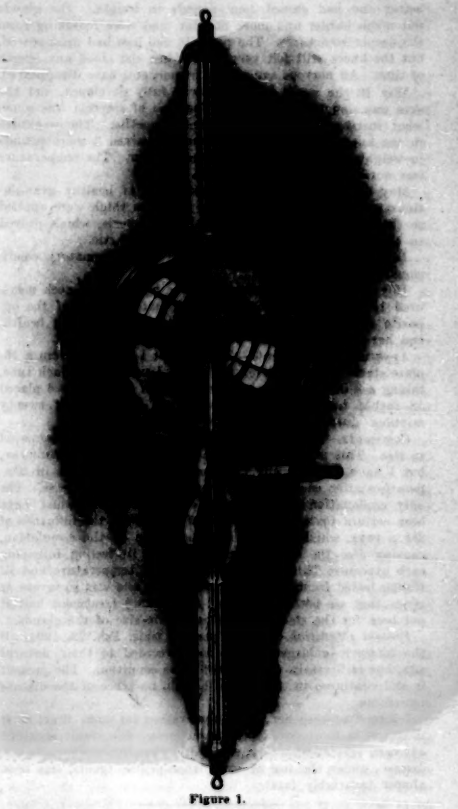


Figure 1.

structures of rarefied air are repelled from the concave disc or cathode forming the cathode rays or stream. This cathode stream striking the surface of the anode or disc in the center of the tube produces the *x*-ray. To obtain a sharp focus the anode must be a given distance from the cathode, just as an object must be a given distance from a lens to be in focus.

In making a Crookes tube by all methods used heretofore, it has been practically impossible to get the anode the required distance from the cathode, so as to obtain a sharp focus, as the stem supporting the anode had to be sealed in the glass by guess, and the tube exhausted before it could be tested,

when if the anode was found defective in respect to its focus, it was too late to remedy the defect, without going to an expense nearly equal to that of making a new tube. A microscope can not be focused accurately by a person who guesses at the distance the lenses should be from an object, without looking through them. This would be much easier, however, than to focus a Crookes tube by guess, as to the distance the anode should be from the cathode, because of the skill required on the part of the glass-blower to seal in the stem supporting the anode, so as to hold it where he thinks it should be; his judgment of where it should be is purely guesswork because there is no way of testing, until the tube is exhausted and properly excited.

The new feature of my tube is in having the anode mounted on a threaded stem which can be magnetically operated through the glass, so as to move the anode up or down or circumferentially with the surface of the tube, to obtain an absolutely accurate focus (Fig. 3).

The little armature on which the magnet acts can not possibly get out of adjustment, and will hold the anode in any required position, either in focus or out of focus, as the operator may desire for some therapeutic purposes.

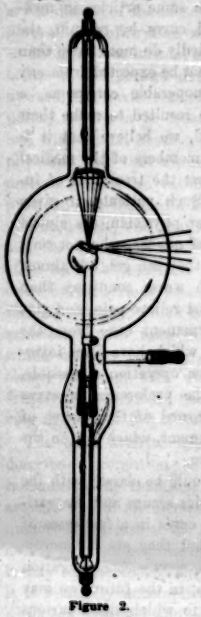


Figure 2.

When a cheap metal is used for the anode, it must of necessity be out of focus because it will not stand up under the strain of having the molecular bombardment confined to a very small area, as is the case when the anode is in focus. Platinum is the only metal that will do for a sharply focused anode, as it not only stands a very high degree of heat, but is not broken down by the molecular bombardment, like inferior metals, e. g., nickel steel.

In my tube the anode (Fig. 4) is completely covered by a plate of platinum made very thick at the focus. This plate of platinum is electrically welded to the metal forming the body of the anode, and will stand an unusual degree of heat, and unlimited usage, even with the sharpest focus.

With my method of magnetically adjusting the anode, it is possible to make every tube alike, and to accurately focus the same after the tube is finished and in operation just as you focus a microscope by looking through the lenses, instead of guessing at the adjustment by observation as to the distance of the lenses.

In order to appreciate the vast difference in *x*-ray work due to the proper focusing of a tube, the sharpness of definition can be carefully tested (Fig. 5) by taking an ordinary wire screen, 20 holes to the linear inch (called a 20-mesh sieve), hold the fluoroscope 24 inches away from a tube, and it will be found that with a poorly focused tube the screen will have to be brought very near the surface of the fluoroscope in order that the mesh be clearly distinguished. The nearer it is necessary to bring the screen to the surface of the fluoroscope, the more the tube is out of focus; but the farther away the screen may be held and the mesh clearly distinguished, the more accurate is the focus of the tube. With a perfectly focused tube the holes in a 20-mesh screen will stand out perfectly clear at least 12 inches away from the fluoroscope, having the fluoroscope 24 inches away from the tube.

A few simple tests that will enable anyone to distinguish a good tube from a bad one should be carefully considered. X-ray workers posted on the requirements of a good tube will agree that it is more difficult to obtain a good tube to-day than it was a few years ago, before low-priced competition arose, and that two tubes made in appearance exactly alike, with practically the same degree of vacuum, and the same quality of glass for the bulb, will give entirely different results, on account of the difference in the focus effecting the definition in radiographic work. Every operator will find that

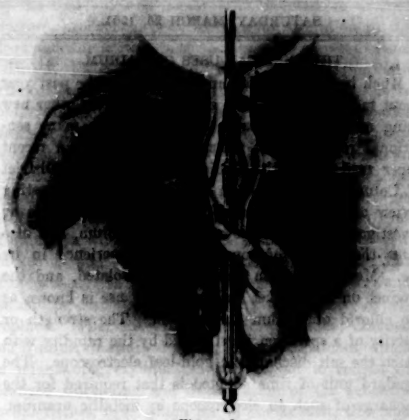


Figure 3.

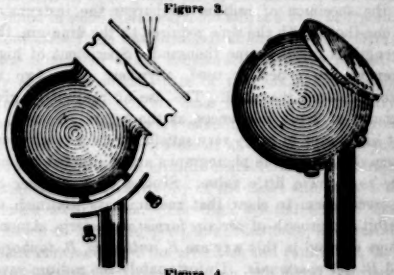


Figure 4.

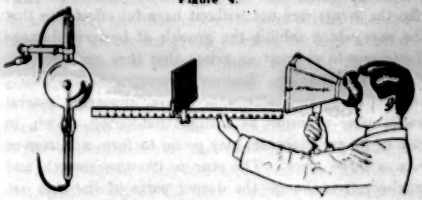


Figure 5.

out of a large number of tubes, as made heretofore, but one will do good work, and one that he is willing to adopt as his "pet tube."

To be a member of the medical profession is to fill the most responsible position of which the author has any knowledge. The lives of not only individuals, but whole communities are entrusted to their care. There is no profession nor calling where a mistake has such serious results as in this, the medical. —*Medical Recorder.*

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THE SURGICAL USES OF RADIUM.

Much has been written and said during the past year about radium and its uses, and, as with every other new thing used therapeutically, there have been many sensational reports about remarkable cures. In a recent paper read before the Medical Society of the District of Columbia, Dr. Truman Abbe[1] gives an interesting review of the important work which has been done by investigators all over the world with radium, and also gives the results of some personal experience in its use. Metallic radium has not been isolated, and the product on the market and in general use is known as the chlorid of barium and radium. The strength or activity of a specimen is estimated by the rapidity with which the salt discharges a gold-leaf electroscope. The standard unit of time adopted is that required for the discharge of such an electroscope by metallic uranium. If the specimen of radium discharges the instrument in one-thousandth the time required by the uranium, the strength is taken as one thousand. Specimens of high strength are generally used, anywhere from two to three hundred thousand. The use of radium to give pictures of dense substances, as the *x*-rays are used, is not likely ever to prove very satisfactory, for it gives no sharp definition; the photographs are so blurred in outline as to have little value. Studies by a number of observers seem to show that radium rays diminish or inhibit the growth of certain forms of bacteria. Among others affected in this way are *B. anthracis*, *B. typhosus* and *B. coli communis*. Unfortunately the radium rays, like the *x*-rays, are not without harmful effects, so that the rays which inhibit the growth of bacteria damage the tissues to so great an extent that they probably will prove of little value. Radium burns resemble in nearly every respect those from the *x*-rays, appearing several weeks after exposure as a slight reddening, which, in case of longer exposure, may go on to form a blister or even a large ulcer. The scar is likewise smooth and hairless, even though the deeper parts of the skin are not involved, and healing is as slow as in *x*-ray burns.

The therapeutic uses of radium also follow the same lines as those of the Finsen and Roentgen rays. A number of cases of lupus treated successfully with radium rays have been reported. In some of these one part of the disease was treated with Finsen's light and the other with radium, with results in favor of the radium. Psoriasis and telangiectasis have also been treated successfully. One case of general melanosarcoma of the skin is reported by Exner of Vienna, in which the smaller nodules disappeared and the larger ones were growing smaller at the time of report. A large number of cases of inoperable and recurrent carcinoma and of epithelioma have been treated with radium, some of them apparently with considerable success. Exner treated a group of twenty cases in Gussenbauer's clinic with evident improvement in all. Cases of carcinoma of the cervix, and a case of inoperable carcinoma of the cervix and vagina, have been reported as successfully treated with radium. But too much confidence must not be placed in the value of radium therapy, and further study is necessary.

Newspaper reports—and even some articles in medical journals—about wonderful cures by radium, the *x*-ray or by other means undoubtedly do more harm than good. While too much should not be expected from any of those means of treating inoperable carcinoma, a sufficient number of cures have resulted to make their use entirely justifiable. Indeed, we believe that it is very unfortunate that so many members of the medical profession are inclined to neglect the treatment of inoperable malignant diseases. Such patients, if given no encouragement by the regular physician, are almost certain to fall into the hands of quacks, who not only extort from them all the money they can get, but almost invariably leave them in much worse condition than they were before. We can at least relieve pain, and give a little encouragement for permanent cure from the use of a number of the means which have been introduced from time to time. When operation is possible, it should certainly be given the preference in every case, and patients should be warned of the danger of temporizing with means of treatment, which are, in the majority of cases, only palliative.

The radium rays, no doubt should be classed with the *x*-ray, Coley's serum, Adamkiewicz serum and the various caustics. These have given cures in a few cases of inoperable malignant diseases, but they are too uncertain in their action to be used except when operation is out of the question. No doubt in the future we may be able to determine the cases to which these various therapeutic measures are best adapted, and the number of cures by such means may be considerably increased. It is along these lines we believe that radium will prove most useful.

1. Washington Medical Annals, 1904, vol. ii, page 362.

ARTERIOSCLEROSIS.

The changes in the blood vessels are important accompaniments of senility. Whether these begin in the one coat or in the other, they give rise to loss of elasticity and reduction in lumen, so that the tissues are less well than normally supplied with blood, which, in addition, may be deficient quantitatively and qualitatively. The result is a condition of impaired nutrition,

which by reason of the nature of the underlying disorder is insidious in onset and progressive in course. The alterations in the vessels, while as a rule widespread, are not always uniform in distribution, either in extent or in degree, and the sequels to which they give rise vary correspondingly.

A number of interesting points were brought out in a discussion of this most important topic held recently before the Pathological Society of London.[1] Dr. T. D. Savill defined arteriosclerosis as a chronic, generalized thickening, condensation or degeneration of the arterial walls, which become hard or less elastic than normal, while the lumen remains unduly patent after death. He distinguishes three varieties, namely, intimal, medial and adventitial. The first and the third are often secondary to disease of the muscular coat. Atheroma, a patchy fibrocellular infiltration of the intima, is to be considered as distinct from intimal sclerosis. From a study of the bodies of 400 persons dead at the age of 60 years and upward, Dr. Savill reaches the conclusion that extensive patchy atheroma is consistent with extreme longevity and with a total absence of symptoms or vascular complications, and that the same statement is applicable to marked generalized intimal and adventitial sclerosis, provided that the media is relatively free from hypertrophy or disease, and that the balance between the heart and the arteries is not materially disturbed. On the other hand, he considers moderate disease of the muscular coat a serious potential evil. This may take the form of atrophy, which is not common, but is found in association with some wasting diseases; hypertrophy, which is more common, especially after middle life; cloudy swelling, with which granular degeneration is frequently associated; necrosis and calcification, occurring in spots or foci of varied size.

The term arterial hypermyotrophy is employed to describe a condition characterized by a generalized increase in the thickness of the muscular coat of the arteries due to an increase in volume, with or without numerical increase of the individual muscular fibers. It is a condition of genuine muscular hypertrophy, although it may be succeeded by degeneration. At an early stage it is relatively uncomplicated by other arterial disease, while later intimal and adventitial sclerosis and degeneration are likely to be present. The condition may be secondary to chronic renal disease, but often it occurs independently of such disease. It is, as a rule, associated with hypertrophy of the heart, either as cause or as result, or as the product of a cause common to both. The blood pressure is high, and the condition of the vessel-way may be responsible for hemorrhage into the brain and other situations.

Dr. Clifford Allbutt recognizes three varieties of arteriosclerosis, namely, toxic, as from lead, infectious diseases, diabetes, etc.; involutionary, from senile degeneration; and secondary, from arterial hyperpiesis. The first and the second are not necessarily attended with increased arterial pressure, on which the third is essentially dependent. The second and third may be present together, but are not so as a rule. In the second calcification is more likely to occur and all of the coats of the artery may be involved, but the heart is little if at all hypertrophied or dilated. In the secondary variety the first apparent factor is an increase in arterial pressure, probably dependent on some alteration in the blood and this in turn on some perversion of metabolism.

Dr. J. F. H. Broadbent includes under the term arteriosclerosis the degenerative lesions of the aorta comprised under atheroma, as well as those of the smaller vessels, on account of their close etiologic and pathologic relations. In a study of the vascular changes in sixteen cases of cerebral hemorrhage, senile degeneration of the vessels was found in two, while seven were associated with granular kidney and seven with a type of kidney in which the most characteristic changes were thickening and hyaline degeneration of the inner coat of the vessels. In the latter fourteen cases the heart and the middle coat of the radial artery were greatly hypertrophied. The cerebral vessels were dilated, thinned and hyaline, or studded with small white patches, which on microscopic examination were found to consist of localized thickening and degeneration of the subendothelial tissues, over which the muscular coat, thin and atrophied in some instances, could not, as a rule, be traced. In four cases there was advanced atheroma of the aorta; in the remainder slight degenerative changes immediately above the aortic valves or no change appreciable to the naked eye. Of six cases in which the coronary arteries of the heart were examined they were found healthy in four and in a state of advanced degeneration in two. The principal clinical characteristics were high arterial tension, hypertrophy of the heart and in several instances albuminuria. The high arterial tension was attributed to increased peripheral resistance, as a result of tonic contraction of the arterioles and capillaries, due to toxic substances circulating in the blood, perhaps from imperfect elimination on the part of the diseased kidneys. In the second group of cases the high arterial tension is believed to have antedated by many years the disease of the kidneys, and the toxic substances, such as lead and the products of deranged metabolism, that induce hypertonicity of the peripheral arterioles also give rise to the thickening and the degenerative changes in the renal vessels. The increased peripheral resistance causes hypertrophy of the heart and the muscular coat of the systemic arteries, and this is not to be regarded as a disease, but as a response to increased work. The cerebral vessels, however, being poorly provided with muscular tissue, become dilated under the constant and increasing pressure; their nutrition is interfered with; thickening and degenerative changes occur in the subendothelial tissues; the muscular coat becomes atrophied over the bulging necrotic tissue; and rupture frequently occurs. This type of degeneration, common in the aorta

1. The Lancet, Feb. 20, 1904, p. 506.

and the cerebral vessels, is not met with in the kidneys, in which thickening and hyaline degeneration of the intima and adventitia and hyaline degeneration of the glomeruli are the most characteristic lesions. The toxic products in the circulation are thought to be the predominant factors in causing vascular degenerations in the kidneys, while high arterial tension is considered as mainly responsible for lesions in the cerebral vessels. Intermittent strain associated with arduous occupation is doubtless responsible in many instances for the degenerative changes in the aorta with which aneurism is so frequently associated. Syphilis is an important etiologic factor in a large number of cases. Microscopically obliterating endarteritis of the vasa vasorum will be found, causing localized areas of necrosis in the vessel wall as a result of imperfect nutrition.

With a knowledge of the facts at hand the problem presented to the clinician is the removal of influences causing increased arterial pressure and the reduction of this pressure to the normal, and also the elimination of toxic matters circulating in the blood, apart from prophylactic measures directed to the avoidance of these conditions. Hereditary influences must receive consideration in this connection and special precautions must be taken by those in whose families arterial degeneration is known to occur.

THE TYRANNY OF WORDS IN MEDICINE.

In his recent volume of lectures on diseases of the nervous system, in the course of his description of a case that he found labeled on the bed card of his clinic "simple neurasthenia," though on the gums of the patient he found a conspicous lead line, Sir William Gowers has something to say of the word neurasthenia and of other words that may cover symptom-complexes, for which it would be much better if the physician should find more definite terms. He says:

> The concise and concrete character of the word neurasthenia gives it a satisfying definiteness. This depends to a large extent on its classical and somewhat graceful sound. Not only is it graceful to the ear, but it is grateful to the mind of the patient who suffers and longs to know from what, who longs to have a name for that which he, or more often she, feels must be a more definite malady than is suggested by the commonplace designation of nervous weakness. But its use has extended far beyond the needs of the patient and indeed did so from the first. It has firmly established itself in current clinical terminology. Men are apt to rest on it as they would not on its English equivalent. If they do not actually think that they have found the malady from which the patient is suffering an influence is often exerted on them (of which they are unconscious) which lessens the tendency to go further in the search for the whole morbid state. The Royal College of Physicians of London could not include it in their nomenclature of disease. And yet it is now one of the most common of medical words in every language.

Sir William insists that words are our servants, but that they often exert a very masterly influence on us, none the less effective because we are not conscious of it. This is only, of course, a familiar exercise of what philologists have long known as the tyranny of words. With regard to neurasthenia, anyone of reasonably wide experience in hospital dispensaries in large cities must know how many sins of diagnosis the word serves to cloak. Everything from mild heart disease, incipient kidney disease and beginning tuberculosis, with their well-known tendencies to produce tired feelings, up to and including the severer forms of heart and kidney disease, and even such serious conditions as Addison's disease or diabetes or organic nervous disease come labeled with that wonderful word neurasthenia—more grateful far than Mesopotamia. It has quite displaced the word malaria, which used to cover so many of these conditions fifteen or twenty years ago, but which fortunately now has sunk into more or less innocuous desuetude, though malaria's replacement by another equally vague term does not argue much for general advancement in medical diagnosis.

Neurasthenia, however, is only one of a group of words that serve to express very indefinite diagnostic ideas, yet give a certain amount of satisfaction to patients, and apparently also to physicians. Biliousness is another one of these words. Any physician who analyzes the next ten cases he sees in which patients say that they are bilious will find, we venture to say, at least six different conditions included under this term. Whenever a patient has acid or bitter eructations, the word bilious is prone to be used in describing the affection, and even physicians do not generally realize that the bitter tasting material which is sometimes regurgitated, is not bile but peptone—an intermediate stage of stomach digestion.

It has been pointed out that the three words most popularly used for the description of common affections —rheumatism, catarrh and gout—signify according to their etymologic meaning exactly the same thing. Catarrh means an increase of secretion from its root, the Greek verb "to flow." Rheumatism has the same derivation; gout is probably from the Latin word "gutta," a drop, and also represents an increase of liquid in a part. We are sometimes prone to be humorous at the expense of a former generation of physicians who spoke of many affections as "rheums," and even classed all of the eczematous conditions, and it may be said most other skin diseases, under the term "salt rheum." There is no doubt, however, that our generation is leaving many openings in just the same way for the physicians of the future to exercise their wit. If the use of these lax general terms could be eliminated, there would be much less room for the wonderful cure-alls that now are so glibly advertised, so that there are good reasons for special efforts to get away from the tyrant words.

USEFUL BACTERIA.

One is apt to become so deeply impressed with the fact that bacteria are producers of disease, that one may lose sight of the equally important fact that there are groups of bacteria which are useful to mankind and

even essential to our well-being. The most important group in this large class of micro-organisms is that of the normal inhabitants of the intestinal tract. It is well known that the intestinal tract of most of the warm-blooded animals is literally swarming with bacteria of various kinds, but their importance to the host is often greatly underestimated. Indeed, it has been thought that the body would be better off without them, but this seems to be a mistake, as is made evident by the following facts pointed out by Strasburger.[1] Experiments on birds and mammals indicate that the more highly organized animals can not live very long if all bacteria are excluded from the intestine. This is especially true of those animals which live largely on a vegetable diet, because in man and many of the highly organized warm-blooded animals the intestine does not secrete an enzyme that is capable of dissolving cellulose, and thus liberating the nutritive material inclosed in the vegetable cells, as is the case, for instance, in snails. The coarser vegetable foods might, of course, be reduced, by mechanical means, to such a fine state of subdivision as to do away with the necessity of dissolving the cell membranes in the process of digestion. This task is said to be performed in man, by the *Clostridium butyricum*, and in the herbivora by the *Bacillus amylobacter*, which are normal inhabitants of the intestinal tract, and are probably the same organism.

Most foodstuffs are, under certain conditions, decomposed by bacteria, and this decomposition may be either putrefaction or fermentation. In the small intestine the conditions for putrefaction are most favorable, on account of the temperature and the richness in proteid of the contents, but it is prevented by fermentation by the carbohydrates, caused by the *Bacillus lactis aerogenes* and the *Bacillus coli communis*. These organisms serve thus as a protection for the body, because if putrefaction were allowed to go on in the small intestine it would soon cause symptoms of intoxication, due to absorption of toxic products. It must be remembered that putrefaction in the small intestine would be quite different from that going on in the large intestine, because in the former are found partly digested proteids, which mostly are absorbed before the food reaches the large intestine. In addition to the protection against putrefaction and the consequent auto-intoxication, the fermentation in the small intestine is said to kill many pathogenic bacteria which are taken in by the mouth and pass through the stomach unharmed.

Another important group of bacteria is constituted by the nitrifying organisms. It is well known by the expert agriculturalists that a soil which is poor in combined nitrogen is not suitable for vegetation. This soil could be improved by adding compounds containing nitrogen, but that is impracticable. Another and more practical method of enriching this soil consists in growing in it the leguminous plants, especially clover. These plants have the power of increasing the nitrogen content of the soil, but it has been found that the plants alone do not possess this power. It is necessary that the soil should contain nitrifying bacteria, most important of which is the *Bacterium radicicola*. This organism grows in the nodules on the roots of these plants, and builds up nitrates from atmospheric nitrogen. The nitrates are taken up by the plant, and when the plant dies they get into the soil and render it more suitable for other vegetation. In Germany and other European countries, large tracts of barren land have been made productive by inoculating the soil with the *Bacterium radicicola*, and growing leguminous plants in it for several years. Our own agricultural department at Washington is now carrying on experiments in the hope of improving some of the arid land of our western states.

1. Münchener med. Woch., 1903, 50, 2220.

PNEUMONIA AND SOFT COAL.

In the monthly bulletin of the Connecticut Board of Health, the secretary, Dr. Lindsley, makes the point that some of the increase of pneumonia during the winter just closing is due to the increased use of soft coal. This suggestion is perhaps worthy of some thought. There is no doubt that since the great coal strike of last year there has been an increased usage of soft coal, and the high prices that have been kept up since then by the operators have a tendency to make this more or less a permanency. It will be a great misfortune, not only in an esthetic but possibly also in a sanitary point of view, if the price of hard coal is maintained, putting it out of the reach of many who formerly utilized it and tempting many others who perhaps could still afford it, but who through motives of thrift will more or less discontinue its use. It is possible, of course, that the theory that soft coal is responsible for the increase of pneumonia is overstated, but still if it is at all a contributing cause even of the loss of a few lives, it is not a matter for neglect.

CANCER AND FROZEN MEAT.

A rather curious inquiry was made in the British House of Commons a few days ago, asking whether the use of frozen meat—which has become a considerable portion of British diet—was in any way responsible for the increase of cancer. It shows the public interest in this subject, though the possibility of frozen meat having anything to do with cancer is about as remote as that of the responsibility of tomatoes or other articles of food which have been thus credited in the past. Of course, the molecular changes which take place in the process of freezing may deteriorate the nutritive qualities of meat to a certain extent, but so far as we have been able to learn or observe, cancerous disorders are not more frequent among the Eskimos, who for a large part of the year, from necessity, live almost exclusively on frozen meat, than among other people of the globe. Of course, the field of observation there is limited, but if frozen meat were really responsible for many of these evils, this

peculiarly hardy section of the human race ought to have shown its effects.

X-RAY IN LEUKEMIA.

That the *x*-ray in some mysterious way produces tissue changes that may result in the disappearance of superficially situated pathologic lesions or may lead to irritation or burning of the healthy skin, is well known. Of its effects on deeper structures, both in conditions of health and of disease, much less is known. Experience alone can show whether it is efficacious in the case of tumors lying deeper than the skin, and whether any harm to normal structures, analogous to the burn of the skin, may result from its long-continued use. A few months ago Senn[1] reported on the remarkable effects of the *x*-ray in leukemia. In the present number of THE JOURNAL is reported a carefully recorded case by Brown, in which a change for the better that is truly astonishing is described. Brown cautiously refrains from declaring his case permanently cured. This is wise, for we know the tendency there is in leukemia, pseudoleukemia and pernicious anemia to spontaneous improvement and relapse, even with no treatment whatever. Pseudoleukemia, also, under the influence of an intercurrent erysipelas, may be symptomatically cured. The blood picture, the spleen and glands as regards size, the subjective symptoms in leukemia may all show decided improvement for a time. But these changes seem to be quantitative rather than qualitative, and sooner or later the relapse occurs. It would be wise, therefore, in all instances of marked improvement in leukemia, to make not only a count of the number of the leucocytes, but a differential count as well. A large percentage of myelocytes in the blood of a supposedly cured leukemic may show that the underlying condition has not been done away with. While reports of any therapeutic measure that will produce such striking benefit as the *x*-ray in leukemia are valuable, conclusions should not be too hastily drawn, and each case should be carefully studied and watched for a long period.

THE DANGER OF BURIAL ALIVE.

A bill was recently introduced in the Massachusetts legislature providing for the compulsory employment of certain specified means to prevent premature burial. The legislator seems to have the idea that many persons are buried alive, and that precautions are necessary to prevent such accidents. Our contemporary, the *Boston Medical and Surgical Journal*, very justly criticises this proposed legislation, and gives good reasons why it should not be enacted. The chances of premature burial, according to the best medical opinion, are very slight, save, perhaps, in periods of panic and of epidemics, and the sensational stories which appear in the secular press and which have given rise to the morbid fear—which is the real instigator of the bill—have seldom any basis of fact. The common use of preservative fluids in the body before burial would certainly prevent any possibility of resuscitation, and yet we have never heard of any involuntary manslaughter being committed by embalmers. A man can not rise in his grave with his arteries and veins filled with an arsenical solution, and this is the actual condition of things in a very respectable proportion of burials. While the idea of being buried alive is most distressing, it is improbable that there could be much agitation or suffering, because trance conditions are very seldom if ever associated with consciousness, and the lack of air in the coffin would quickly asphyxiate and extinguish any spark of life that might remain, probably without any suffering whatever. This, however, does not make it any more desirable to be buried alive, but it is safe to say that the opportunity for such is hardly to be calculated on. One thing, however, is worth consideration, and that is that there is occasionally a case in which greater care should be exercised in making out the death certificate. The practitioners should never neglect due personal inspection or examination. It should be less common for death certificates to be signed by physicians without any personal knowledge of the actual state of affairs; while the consequences are not likely to be serious, it is a dereliction of duty on the part of the physician who thus makes out the certificate. The signs of death and the indications of the history of the case are sufficiently certain to enable any competent physician to decide either that he may safely give his certificate, or that, if he feels doubtful, further evidence is necessary. The latter, however, would be a rare necessity.

1. N. Y. Medical Record, Aug. 22, 1903.

GOITER IN THE STATE OF WASHINGTON.

Some months ago the editor of the *Medical Sentinel* published an editorial inquiry as to the prevalence of goiter in the northern Pacific states, especially Washington. In reply, Dr. Thomas W. Musgrove, Mission, Wash., describes[1] the conditions in the Wenatchee and Puyallup valleys in that state. In Mission, where he practices, goiter is more common than in any other part of the state. Whole families are infected, and animals—dogs, lambs and pigs—suffer from this endemic enlargement of the thyroid. Nearly every woman who has lived there long and who is pregnant has her neck enlarge *pari passu* with her abdomen. In Puyallup Valley most of the cases appear in young girls, and are cured if treated early with tincture of iodin externally and hydriodic acid and phytolacca internally. It seems more particularly to affect those who drink the water from the running streams that come from the mountain glaciers, while those who drink from wells where the water has been filtered through gravel are less likely to be affected. Musgrove is confident that there is some mineral constituent in the water that is the cause of the condition. He finds a rather peculiar condition of the urine. The specific gravity is high, 1025 to 1035, phosphates are abundant, and the carbonates are so marked that the addition of nitric acid to urine in which boiling had caused an albumin-like precipitate, clears up that precipitate with such a sharp effervescence from the escaping carbonic acid gas as to create a decided commotion in the fluid. This condition is found in the perfectly healthy inhabitants of this valley. The editor of the *Medical Sentinel* thinks that Dr. Musgrove is a little too optimistic as to the possibility that the cause of

1. Medical Sentinel, February, 1904.

goiter may be discovered, since much work has been done abroad and without very definite results. The absence of iodin in the water seems to be the only fact that is apparently correlated with the disease. He remarks that Dr. Musgrove's observation that the internal use of hydriodic acid relieves these cases is suggestive. It would seem that with such a localized endemic condition, something might be done to determine more definitely the pathology of goiter. We trust that the scientific men of the profession in Washington who have opportunities to observe and laboratory facilities for experimentation will do their best to elucidate the subject. Further data on the subject are very desirable.

WATER PURIFICATION BY BACTERIA.

In a recent article, Prof. John H. Long[1] reviews some of the facts in regard to bacteria, especially as regards water purification. Most of his data were drawn from the testimony brought forth in the investigation relative to the purification of the Chicago sewage in the Illinois River. As this matter is still in litigation, we need not here discuss the point at issue, but will simply allude to one point which Long mentions, which is at least suggestive. Referring to the success of bacterial fertilization of land, he says:

> With such experience before us I believe it is not too much to hope that some day someone will undertake the sanitary inoculation of streams as a means of hastening or completing the destruction of organic matter. Indeed, a suggestion essentially in this line was thrown out by Dupre sixteen or seventeen years ago, but it attracted no attention, as too little was then known of the conditions or the extent of bacterial action.

Professor Long admits that the question is a complicated one, and that there are problems in it that may be difficult of solution. The element of time enters into the question of the destruction of pathogenic bacteria, and the flow of the river must not be too rapid. He suggests, however, that we are coming to the point where the flow of some of our large rivers will have to be checked or governed to avoid the disastrous floods which occur, and it may be that the storage reservoirs primarily designed to hold up the floods may become purification reservoirs. It is probable that there is something in his suggestion. The contamination of river waters has long been a serious question in many older countries, and it is beginning to be serious in this country. Something will have to be done if we are to preserve the purity of the water supplies and the attractiveness of our flowing streams, especially in our more thickly settled regions. If it is possible by bacterial treatment to remedy some of the threatening evils, it is a matter worthy of very serious consideration not only by scientific men but by the state. When the full testimony is in and the facts fully developed as to the points of dispute now being litigated between the State of Missouri and the State of Illinois, we will perhaps have facts that will help to indicate the course to be pursued. We realize the importance of bacteria, at least so far as the pathogenic forms are concerned, but we are very apt to ignore the beneficial effects of a far greater number of these microbes.

1. Journal of the American Chemical Society, vol. xxvi, No. 2.

OVAL BLOOD CORPUSCLES IN MAN.

The oval or elliptical red blood corpuscles are generally supposed to be found in mammals only in the group to which the camel and its close congeners belong. It is interesting, therefore, to record a case of what we must consider an anatomic or physiologic sport of this kind in the human species. Mr. Melvin Dresbach[1] reports the case of a healthy young mulatto in the University of Ohio in whom it was accidentally found that the red corpuscles of his blood were elliptical instead of round. The case was carefully investigated for a period of four months, specimens being taken at various intervals, and in every specimen many cells of abnormal shape were noted. Dresbach says the erythrocytes were distinctly elliptical, slightly biconcave, non-nucleated cells which did not adhere in rouleaux. In many of these the biconcavity was scarcely perceptible. The estimate was that fully 90 per cent. of the red cells lacked the circular outline of normal human corpuscles, and that the elliptical shape was not modified in any way under the pressure of the cover glass. In every other respect they seemed to correspond with the normal red blood cells of the ordinary individual, except in the slight degree of biconcavity. A large number of the corpuscles were measured and extremes and averages are reported. The shortest width observed was 3.9 microns, the greatest, 4.8; the shortest length was 8.5 microns; the greatest, 10.7. The average length was 10.3 microns and the average width 4.1 microns. It would appear, therefore, that in this individual the elliptical blood cells formed the mass, and that the proportion of length and width was about 2.5 to 1. These proportions differ widely from those of the average normal red blood cells, which average 7.2 to 7.8 microns in diameter. The thickness was practically the same as that of normal red blood corpuscles, the number was 5,000,000 per cubic millimeter and the quantity of hemoglobin was normal. The colorless corpuscles presented no peculiarities. It is a rather curious fact that the brother of the individual presenting these peculiarities had perfectly normal corpuscles. The case must be an exceedingly rare one, and further details as to the physical condition would be desirable. Just what causes the peculiar variations in this case is left entirely a matter of conjecture. It would be rather a strain to call it a reversion to an earlier type, and the fact that it occurred in an individual of mixed blood does not clear up the case. The observation seems to be well accredited, appearing as it does in a scientific journal and occurring in a leading state institution.

1. Science: March 18, 1904.

HOW TO EAT.

In a recent issue of THE JOURNAL "The Ethics of Eating" was editorially noticed and the importance of the element of pleasure and enjoyment in the taking of food emphasized. An article in the *Nord Medical*, June 1, 1903, by an experienced French physician, Dr. A. Monteuuis of Dunkirk, still further brings out this fact. He emphasizes that none of the organs of the body is so sensitive to the action of the nervous system and so directly sensitive as the stomach. Any emotion or annoyance

may be sufficient to arrest the gastric digestion and entail next day a headache, pains in the limbs or other disturbance. Worry or overfatigue is liable to produce the same effects. The palpating hand can feel the contraction of the stomach under the emotion. Some mothers never digest a meal properly, because they fret over their children's table manners or over household cares. Overwork, especially moral and mental, by fatiguing the nervous system, reacts on the stomach. The organ in these cases is not diseased nor capricious, but is merely a victim to the causes of irritation or depression which exhaust, irritate or at least hinder its proper functioning. We are liable to forget the important part played by the inhibiting influences emanating from the nervous system on the vital processes, and particularly on the digestion. One fatigued nerve center reacts on another, and so on, inducing a whole train of inhibitions. This solidarity of the nerve centers gives the key to keep them in tone. Disagreeable impressions, depressing the nervous system, inhibit the digestive processes. Gayety, on the other hand, promotes them. The preponderant influence of the nervous system is displayed equally promptly in the response to peaceful, cheerful surroundings as in the inhibitions from worry. Monteuuis suggests that the physician should resume his old position in society as the educator, and should preach in season and out of season against the race for wealth and social position which is ruining the digestion of modern men and women. The moralist has been teaching for ages that money and social position do not bring happiness, that the sweetest pleasures the world has to offer are those of simple, happy family life. The medical profession should bring its influence to bear on the same subject and show the public that this alone is the key to normal digestion and health, both of mind and body. The will and character are strengthened by the effort to leave cares and worries outside, and to preach and practice light-heartedness in the family circle, above all at the table. In the treatment of a neuropath the physician should impress on the family the necessity for this nerve hygiene by gayety at the table. If he is unable to secure this, all his other measures will prove futile. Our profession has been remiss in allowing people to get into the present strenuous modes of living without being more fully informed and warned of its almost inevitable health penalties.

HALF FARE TO ATLANTIC CITY.

As is announced under General News this week, a rate of one fare for the round trip to the Atlantic City session of the American Medical Association, June 7 to 10, 1904, has been granted by the Trunk Line Association. This good news is received by telegraph as we are going to press. It means much for the session. The Trunk Line Association also advises other passenger associations to grant the same rate, and there is good reason to believe that they will do so. The Trunk Line Association has been very conservative in previous years, and has granted only a one and a third fare rate. Following its lead this year, it may be relied on that the other associations will grant a half-fare rate—at least throughout the larger part of the country. The effect on the attendance at the Atlantic City session will be marked, and many other signs point to a session which shall be a record-breaker in point of size as well as in other particulars.

Medical News.

CALIFORNIA.

Smallpox at Oakland.—After the disease had run its entire course seven cases of smallpox were discovered in one family in Oakland, and the house was then quarantined.

Health Board Dismissed.—As a result of differences of opinion regarding smallpox policy, the board of health of Petaluma was summarily dismissed from office, and a new board appointed, which organized with Dr. Israel M. Proctor, president, and Dr. Harry S. Gossage, secretary.

Railway Hospital at Los Angeles.—The Santa Fe System has decided to complete its chain of hospitals from Albuquerque to the coast by erecting a hospital in Los Angeles, to cost $100,000, with accommodation for 75 to 100 patients, to be under the charge of Dr. Norman H. Morrison, chief surgeon of the road.

Hospital Attaches Uniformed.—Chief Surgeon George F. Brackett of the city emergency hospitals has made important innovations. The latest is that all attaches appear for duty in white duck uniforms, the insignia of the office of each being neatly embroidered on the military collar of the service coat. The purpose is to prevent confusion and to classify the employes, that strangers and patients may know whom they are addressing.

Bubonic Plague.—The diagnosis of plague in cases 115, 116 and 117 has been bacteriologically confirmed.——A fatal case of supposed plague in a white woman occurred near Concord, Contra Costa County, February 29. This is the third fatal case from this locality.——The supervisors of San Francisco have appropriated $2,000 from the urgent necessity fund, to be used in improving the sanitary condition of Chinatown.——The Danysz virus is now being used in San Francisco and Contra Costa in the war of extermination against rats. (This method is described under Foreign News this week.)

CONNECTICUT.

Diphtheria Closes Schools.—The public schools at Noroton were ordered closed, March 9, owing to the prevalence of diphtheria.

Donation to Hospital.—Bishop Tierney of Hartford has given $5,000 of the $15,000 presented to him by the priests of his diocese, to St. Francis Hospital, Hartford.

The State's Pneumonia Record.—Of the total of 1,384 deaths reported in February, 217, or 15.68 per cent., were caused by pneumonia. In January 1,428 deaths occurred, of which 213, or 14.91 per cent., were due to this cause.

Compromise Smallpox Bill.—After pending for nearly two years the bill of Dr. Charles W. S. Frost, health officer of Waterbury, for services rendered in the smallpox epidemic, amounting to $3,830, was settled for $2,500.

National Guard Reorganization.—Under the reorganization of the medical department of the National Guard, Colonel Schulze made the following nominations for assignment to the First Infantry, March 15: Surgeon-major, Dr. John B. McCook; surgeon-captain, Dr. Heman A. Tyler, and surgeon-lieutenant, Dr. William H. Van Strander, all of Hartford.

New Haven Personals.—Dr. Henry H. Smith has taken a twenty-day trip to the Danish West Indies.——Dr. Nicola Mariani fell on a sidewalk, March 7, and fractured his left arm.——The position of medical examiner for the Yale gymnasium has been abolished, thereby dropping Dr. Jay W. Seaver, who for 25 years has so served. Dr. William H. Callahan, who is in charge of the United States Army dieting squad, will be medical assistant in the gymnasium.

DISTRICT OF COLUMBIA.

Hygienic Cantata.—At the Washington Saengerbund concert, March 20, a notable feature of the performance was a cantata, "Hymne an Hygeia," composed and orchestrated by Dr. John C. Hemmeter of Baltimore.

The Pneumonia Exception.—Washington has not shared in the destructive mortality from pneumonia which has obtained

generally throughout the country. The pneumonia deaths for February were less than for February, 1903.

Reciprocity in Medical Licensure.—The board of medical supervisors of the district has submitted to the commissioners a draft of a bill to authorize the board to issue licenses to practice medicine to licentiates of corresponding boards of other jurisdictions.

New Providence Hospital Opened.—New Providence Hospital, recently completed at a cost of $1,000,000, was opened, March 16, with formal ceremonies, including addresses by Cardinal Gibbons, Secretary of War William H. Taft, Surgeon-General George M. Sternberg, Dr. John W. Bayne, president of the medical board, and others. The hospital has accommodations for more than 500 patients, and there are over 100 private rooms and apartments. Special buildings have also been provided for a nurses' home, and an isolation hospital.

Conditional Department of Public Health.—An ordinance has been adopted by the board of trustees of Columbian University, to go into effect when an endowment fund of $200,000 has been pledged, or a guarantee fund of $10,000 a year for five years has been subscribed, creating a department of public health in which the following subjects shall be taught: Hygiene, Dr. George M. Sternberg; sanitary chemistry, Dr. Harvey W. Wiley; bacteriology, Dr. James Carroll; medical zoology, Charles W. Stiles; sanitary administration, Dr. William C. Woodward; sanitary inspection, Dr. Walter Wyman; dangerous occupations, Charles E. Monroe; comparative medicine, Daniel V. Salmon; insects as agents in the transmission of disease, L. O. Howard; international law, Justice David J. Brewer; constitutional and statutory law, Henry St. G. Tucker, and administrative law, George W. Scott.

FLORIDA.

A Year and a Day for Absent Treatment.—In the United States Court, at Jacksonville, March 1, Mrs. Helen Wilmans-Post, an "absent-treatment" healer by the correspondence method, was convicted of using the mails for fraudulent purposes, and was sentenced to imprisonment in the penitentiary at Nashville, Tenn., for a year and a day. An appeal was taken and granted, and a bond of $5,000 given.

Sickness Statistics.—Dr. Joseph Y. Porter, Key West, state health officer, in his annual report calls attention to the efforts of the State Board of Health to obtain information as to the prevalent diseases in the state, that intelligent study may be made the causes which produce them. He urges the physicians of the state to report all cases of illness which necessitate absence from work or business or confinement to the house. From these reports he can make up a consolidated report which will be of value in determining the health status of the state.

Smallpox in Florida.—Dr. Hiram Byrd, special agent of the State Board of Health, in his report to that body, states that in 1903 he investigated 23 reported outbreaks of smallpox, exclusive of Jacksonville and Pensacola. In 3 instances the alarm was false, and in 6 the source could not be made out. Of the remaining 14, 7 originated in Alabama, 3 in Georgia, and one each in South Carolina and Indiana. Two cases originated in Florida. He draws the following conclusions:

1. Once an individual is rendered immune against smallpox he is immune for life.
2. In a great majority of cases one vaccination produces that immunity.
3. One successful vaccination may, on the other hand, produce only a partial immunity, and in such cases the individual may subsequently contract smallpox or be successfully vaccinated.
4. In a great majority of cases one attack of smallpox produces complete immunity.
5. One attack of smallpox may, on the other hand, produce only partial immunity, and in such cases the individual may subsequently contract smallpox or may be successfully vaccinated.

GEORGIA.

Fund Almost Complete.—Less than $800 now remains to be subscribed to ensure the founding of a hospital in Albany.

Addition to Macon Hospital.—Macon Hospital Association has decided to build an additional wing to the hospital building, which will contain 18 rooms.

Smallpox.—Cuthbert and Mansfield report the disease as epidemic.——In the Covington convict camp a case has appeared, and all the convicts have been vaccinated.

Personal.—Dr. Walter A. Crowe has been elected a member of the medical board of Grady Hospital, Atlanta, vice Dr. Virgil O. Hardon, deceased.——Dr. B. S. Gostin, Macon, was examined for the position of assistant surgeon, Georgia State Troops, March 3, at Augusta. He has been appointed assistant surgeon and assigned to the Second Infantry.——Dr. Joseph E. Johnson, Elberton, had his arm broken in a runaway accident, March 7.

ILLINOIS.

Hospital for Sick Insane.—The Board of County Commissioners of Cook County has authorized the transformation of the old consumptive hospital at Dunning into a hospital for the sick insane, at a cost estimated at $10,000.

To Avoid Publicity.—The East St. Louis Medical Society has adopted the following resolution:

Resolved, That the East St. Louis Medical Society request the reporters of this city to omit the names of any physician who may be called in accident cases, or who may perform operations.

Personal.—Dr. Theodore N. Rafferty, Robinson, has returned from a vacation of a month in the south.——Dr. Elbert J. Clark, Winnebago, has decided to retire from practice, and to travel in hope of benefiting the health of Mrs. Clark.——Dr. James I. Wernham, Marengo, has started for Vienna.——Dr. and Mrs. James Warren Van Derslice, Chicago, sail for Europe March 26.

Analyses Water Supply of State.—The Illinois State Board of Health has completed an analysis of the drinking water in all cities of the state having a population of more than 5,000. The supply was found to be "good" in Aurora, Belvidere, Belleville, Braidwood, Batavia, Beardstown, Blue Island, Bloomington, Chicago Fourteenth Street tunnel, Chicago Lake View tunnel, Clinton, Dixon, Freeport, Fairbury, Galesburg, Geneseo, Havana, Hoopeston, Jerseyville, Lake Forest, La Grange, Maywood, Oak Park, Ottawa, Pontiac, Princeton, Pana, Rockford, Savanna, Springfield, Sycamore and Taylorville. It was found to be safe, although not sufficiently pure to be classed as good, in Chicago Avenue tunnel, Chicago, Decatur, Danville, Evanston, Galena, Monmouth and Paxton.

Chicago.

Hektoen Goes Abroad.—Dr. Ludvig Hektoen, head of the McCormick Memorial Institute for Infectious Diseases, will go to Europe early next month to prosecute researches on the scarlet fever germ, and to secure information for use in the construction of a large hospital for infectious diseases, which is to be erected in the near future in Chicago.

Plan Campaign of Education.—The National Anti-Tuberculosis Association was incorporated at Springfield, March 17, by Dr. Walter B. Metcalfe, Rev. Frank M. Carson and others, to distribute information regarding the disease. A free clinic will be established in the Chicago down-town district. It is planned to tender the services of lecturers to those who desire to know more of the subject.

Pneumonia Still Far in the Lead.—Pneumonia caused 137 of the 578 deaths for the week ended March 19, a percentage of 23.72; consumption follows with 74 deaths; then come violence, with 33; heart diseases, with 32, and nervous diseases with 28. The death-rate for the week was at an annual rate of 15.44 per 1,000, higher than that of the previous week, but below that of the corresponding week of 1903.

Medical Society Endorses Emergency Hospital.—At the meeting of the Chicago Medical Society, March 16, the project of the Iroquois Memorial Association to erect an emergency hospital in the business section of the city was approved and the following resolutions were unanimously adopted:

Resolved, That the Chicago Medical Society approve and unqualifiedly indorse the action of the board of trustees of the Iroquois Memorial Emergency Hospital in their generous effort to give to the people of Chicago a modern, fully equipped and endowed hospital capable of rendering prompt assistance to those cases of unexpected injury and sickness which are of daily occurrence, and be it further

Resolved, That we, as a society, tender to the hospital our counsel, advice and professional services whenever required.

KENTUCKY.

Personal.—Dr. William W. Ray has retired from the superintendency of the Western Kentucky Asylum for the Insane, Hopkinsville, and has been succeeded by Dr. Milton Board, Jr., Hardinsburg.

A Change of Management.—Beginning with the issue of January 1, the *American Practitioner and News* passed under the ownership and editorial control of Drs. Fouche W. Samuel and Argus D. Willmoth of Louisville.

Appointments.—Governor Beckham has made the following appointments, which were ratified by the senate before its adjournment: To the State Board of Health, Drs. Joseph M. Mathews, Louisville, George T. Fuller, Mayfield, re-appointed for six years: Dr. Frank O. Young, Lexington, vice Dr. Leslie L. Robertson, Middlesboro, resigned; visitors to Central Asylum

for the Insane, Drs. Maverell K. Allen, Benjamin W. Smock and W. C. Vander Espt, Louisville.

Schools Swindled.—Several of the medical schools in Louisville have recently been imposed on by a man calling himself "Dr. Jos. C. Dougherty." He would matriculate to do postgraduate work and offer a check in payment for a much larger sum than the fee required, and obtain the change. These checks were made payable to Dr. Jos. C. Dougherty, and were drawn on the Jefferson Bank of St. Louis, signed by Daniel J. Dougherty. All the checks were returned with the statement that they were forgeries.

MARYLAND.

Baltimore.

High Death-Rate Continues.—The death-rate continues high, 215 last week against 184 in the corresponding week of last year. This represents an annual rate of 19.51 per 1,000. Pneumonia caused 32 and consumption 29 deaths.

To Make Up Fire Loss.—An appropriation has been proposed for the Johns Hopkins Hospital in the state legislature. This will not, however, equal the loss, and if the Rockefeller plan fails, it is probable an appeal will be made to the country. It is believed that there would be a generous response for this noble institution in its misfortune.

MASSACHUSETTS.

Few Thousands Yet Needed.—The contributions to the $100,000 fund for re-building the Convalescent Home of the Children's Hospital at Wellesley Hills, now amount to $93,077.

Personal.—Dr. George W. Gale, East Saugus, sustained serious injuries by a fall on the ice in Cliftondale, March 4.—— Dr. William H. Grainger, East Boston, who refused to resign from the Board of Trustees of Pauper Institutions, was removed by the mayor, March 11.

Infection by Visiting Servants.—The Woman's Health Club of Boston, on March 18, discussed the spread of disease among families by means of the visiting domestic servants. "Hygiene in the Public Schools" was the topic of a paper read at the same meeting by Dr. Alice M. Steeves.

Bequests.—By the will of William Littlefield, Lexington, the following hospitals benefit: Boston Lying-in Hospital, $3,000; Children's Hospital, $5,000; Willis Consumptives' Home, $5,000; New England Hospital for Women and Children, $3,000; Washington Home (for dipsomania) $5,000; and Massachusetts General Hospital, $5,000. The New England Deaconess Home and Hospital will receive $200 annually from the estate of Alfred M. Williams of Brookline.

From Sanitarium to Sanatorium.—The Sharon Sanitarium has changed its name to Sharon Sanatorium. This institution has proved very useful in its care of incipient phthisis, especially among women, who are received for $5.00 per week. Dr. Frederick I. Knight is the consulting physician, and Dr. Walter A. Griffin the resident physician. Among the newly-elected directors are Drs. Vincent Y. Bowditch, Robert W. Lovett and L. Vernon Briggs; Dr. Bowditch being the medical director and the one whose name has been most closely associated with the institution since its establishment in 1891, the first of its kind in New England.

NEW JERSEY.

The Revival of a Blue Law.—There have been so many cases of contagious diseases in Passaic during the last year that have not been reported that the board of health has decided to pay ten cents to the physician for every case of contagious or infectious disease that he reports.

Cooper Hospital Must Pay Taxes.—The Court of Errors and Appeals of New Jersey has decided against the Cooper Hospital estate, and sustained Camden City in assessing properties of the estate not used for hospital purposes. The hospital thus may be deprived of considerable revenue. There is a claim against the estate for $30,000 for back taxes. The trustees asserted that as a charitable institution, under its charter all properties from which revenue is derived to maintain the same is exempt from taxation.

Examination for Sanitary Inspectors.—The members of the board of examiners appointed to test the fitness of applicants for appointment as sanitary inspectors, met in Princeton, March 16, and an organization was effected by the selection of Dr. William H. Murray, Plainfield, as chairman, and Dr. A. C. Hunt, Trenton, as secretary. The remaining members of the board are M. N. Baker, C.E., of Montclair, D. D. Chandler, health officer of Newark, and D. C. Bowen, assistant state inspector of food and drugs, of Asbury Park. Regular examinations will be held on the first Wednesday of June and December.

NEW YORK.

Personal.—Dr. F. C. N. Jerauld has been appointed a member of the Niagara Falls Board of Health, and Dr. Walter A. Scott has been elected health officer.

For Insane Hospitals.—A bill asking for the appropriation of $1,203,000 for the construction of buildings, repairs and improvements at the state hospitals has been submitted to the legislature.

Why Has Middletown a Low Birth Rate?—The state health commissioner, Dr. Daniel Lewis, is seeking the reason for the low birth rate of Middletown city. Although it has a population of 15,000, during the last five years there have been only 757 births, while the deaths number 1,358.

Improvement at Watertown.—The typhoid fever situation at Watertown shows a marked improvement. The number of cases now in the town is less than 500, and the cases reported daily show a marked decrease in number. Arrangements are practically completed for supplying the town with pure spring water.

Cancer Research Abandoned.—After spending $100,000 the state has abandoned its attempt to find a cure for cancer. The committee on finance has discontinued the annual appropriation of $15,000 to the Cancer Laboratory at Buffalo, as it was asserted that nothing could be shown in return for the money expended.

Pre-nuptial Examination.—A bill will be introduced in the New York legislature providing that all persons must obtain a physician's certificate before a marriage license can be obtained. The bill is intended to put a restriction on the marriage of imbeciles and also to prevent those having consumption and other diseases from marrying.

Toy Pistol and Tetanus.—In view of the agitation by the various medical societies of the state relative to the relation between tetanus and the toy pistol, Senator Armstrong has introduced a bill in the legislature providing that no loaded blank cartridges, toy or other pistols shall be sold to boys under eighteen years of age.

Typhoid at Poughkeepsie.—Within a few weeks so many cases of typhoid fever have developed in Poughkeepsie and the situation is considered so grave that it is feared the State Board of Health will have to be called in and vigorous measures taken to wipe out the disease. There are 21 cases now under treatment at Vassar Hospital.

State Water and Sewer Commission.—A bill is pending at Albany which has for its aim the state control of the water and sewage system of all towns within its boundaries. The board of management is to have power to plan new sewage and water plants and to provide for the extension and improvements of old plants, and to exercise legal control over all conditions detrimental to public health.

Supposed Smallpox, as Usual, Smallpox.—A large number of cases of supposed smallpox has existed in Owego for a number of weeks, but Dr. Lewis and other physicians asserted that it was chicken-pox, and have opposed quarantine. Dr. G. B. Lewis and another patient broke quarantine at Owego and came to Buffalo riding in the trolley cars of that city to consult a specialist in order to prove that they had chicken-pox. When the specialist saw them he immediately reported the cases as smallpox to the health department at Buffalo, and the health authorities and the police are looking for the patients.

The State's Insane.—The tent treatment for the tuberculous and untidy insane has been pronounced successful. There were 147 alien lunatics returned to Europe, and in addition 104 non-resident insane were sent out of the state during the year. More rigid inspection of immigrants at the various ports of entry is needed to insure against alien insane. The commission suggests boarding out old harmlessly demented persons in private families. Since 1903 emergency cases can be sent to state hospitals for prompt examination and report by qualified experts. The new statute provides for the retention of a patient received on such certificate in state hospitals for a period not to exceed 5 days pending the procurement of judicial approval of the medical certificate. This obviates delays by reason of the absence of judicial officers at the time the patient is sent to the state hospital. In this connection the commission recommends the establishment of a temporary detention hospital in New York City and of accommodation at the state hospital in large cities for emergency cases in place of jails and station houses.

Buffalo.

Personal.—Dr. Burt Johnson has gone to Jamaica.——Dr. Roswell Park has sailed for Europe and will return in May.——A complimentary dinner was tendered to Dr. John H. Pryor.

Insane Patient Attacks Physician.—While examining a woman as to her sanity Dr. Floyd S. Crigo was attacked by her with a knife and pursued into the street, barely escaping. Later she was overcome by the police and committed to the state hospital.

Deaths in February.—The monthly report of the department of health for February shows an annual death rate of 14.43 per 1,000. The principal causes of death were as follows: Consumption, 45; debility, 47; cancer, 20; meningitis, 16; apoplexy, 29; valvular disease of the heart, 33; pneumonia, 66; and violence, 23. The total deaths for February, 1904, were 457, as compared to 474 for February, 1903.

Eddyite-Treated Child Dies.—Health Commissioner Greene and District Attorney Coatsworth are investigating the death of William Dobbertin, 5 years of age. The child died of diphtheria, and it is stated that the only treatment given the child was by Eddyism. The boy was treated by two women healers, who gave absent treatment, and during the short illness no examination was made of the throat. A physician was called, but found the child dead and reported the case to the health authorities. Several months ago a somewhat similar case was called to the attention of the grand jury through the medium of the district attorney, but the grand jury reported "no bill."

New York City.

Measles in Greater New York.—Up to March 19 there were 1,435 acute cases of measles in the five boroughs; a number greater than that in any year since 1898.

Pneumonia.—Latest reports show a mortality of more than 6,000 since the first of last December. This is an increase of 31 per cent. over last winter. Next year it is expected that the board of health will treat pneumonia as an infectious disease.

Bill Favoring Rockefeller Institute.—Senator Dowling has presented a bill which prohibits the opening of any street through lands occupied by the Rockefeller Institute for Medical Research, between East 65th and 67th streets in New York City.

Jail Declared Unsanitary.—Sheriff Hesterberg of Kings County has been served with a five-day notice by the department of health to vacate Raymond Street Jail, Brooklyn, which repeatedly has been declared unsanitary and in a dangerous condition.

Bellevue Overcrowded.—For the first time in the history of Bellevue Hospital 1,000 patients were housed there on March 12. The hospital has accommodations for only 857 patients. Considerable apprehension is caused by this number in view of the financial difficulties of several other hospitals in the city.

Ward in Roosevelt Closed.—As the result of the lack of funds the woman's surgical ward in Roosevelt Hospital has been closed. This makes the third ward in large hospitals in this city which has been compelled to close for lack of funds. At least $500,000 is needed to put Roosevelt Hospital on a sure footing.

Scarlet Fever and Measles in Bronx.—The Bronx Board of Health reports over 400 cases of measles and 150 cases of scarlet fever, with a daily increase of between thirty and forty cases. The Roman Catholic Orphan Asylum at King's Bridge is suffering from the epidemic. Since February 10 31 cases of scarlet fever have developed among 800 inmates.

New Masonic Hospital.—The Masonic Hospital and Shelter Association of Brooklyn has been incorporated for the purpose of maintaining a place where Masons can get medical and surgical care. For this purpose the upper floors of the Eastern Homeopathic Dispensary have been rented. The hospital will be opened as soon as the necessary repairs have been made.

Mount Sinai Hospital Open.—The new Mount Sinai Hospital was dedicated March 16. About 10,000 invited guests visited the hospital during the day. The new hospital is built on the pavilion plan, except that its ten buildings are connected by their ground floor corridors. All reasonable provision has been made for the standing needs of progressive medical science and hospital administration.

Dirty Money.—Dr. Darlington, health officer of New York, reports as a result of his investigation that bacteria do not live longer than forty-eight hours on silver, nickel and copper coins. Two dirty bills were washed, one contained 135,000 bacteria, the other 126,000. Two comparatively new bills contained respectively 2,250 and 2,000 germs. On all were found staphylococci, proving that money may carry disease.

Personal.—Dr. Lewis A. Stimson's yacht is being fitted out for a cruise in the Mediterranean and in British waters.——Dr. William T. Bull has been reported ill; appendicitis was feared. ——The following new appointments have been made at Columbia University: Dr. Edwin B. Cragin, professor of gynecology; Dr. H. M. Painter, clinical professor of obstetrics; Dr. Gorham Bacon, professor of otology, and Dr. William Kelly Simpson, professor of laryngology.——Dr. Heinrich Stern has severed his connection with the New York School of Clinical Medicine.

Financial Aid for Eye and Ear Hospitals.—Both the Manhattan Eye and Ear Hospital and the New York Eye and Ear Infirmary have been very much embarrassed financially and there was much anxiety as to whether they would be able to continue their work, at least in its entirety, but at a recent meeting of the board of managers of the New York Eye and Ear Infirmary the trustees subscribed personally and succeeded in raising about $26,000 of the $30,000 required for the coming year. The officials of the Manhattan Eye and Ear Hospital declared at their meeting on March 16 that there was no possibility of their closing any of their wards, as they had an annual income of $50,000, but that they still needed an endowment fund of $250,000.

PENNSYLVANIA.

Philadelphia.

Reception to Dr. Heller.—A reception was given at the Bingham House in honor of Dr. Henry D. Heller, state quarantine physician. Dr. Heller was presented with a handsome model of the new state quarantine tug, *Governor Pennypacker*.

Quarantine Removed.—The quarantine of the Methodist Episcopal Hospital established some time since, as the result of one of the employes being infected with smallpox, has been lifted, and visitors are now admitted to the institution.

Physician Injured.—Dr. Christopher A. Frame, while on his way to visit a patient, was struck by a freight train on the Pennsylvania railroad and received a very severe laceration of the scalp and several contusions of the shoulders and back. His injuries, however, are not likely to prove fatal.

Leper Discovered.—A leper was discovered in the lower section of the city during the past week. He had been in the city about three weeks and applied to a physician for treatment of some skin affection. Diagnosis of leprosy was made. The patient is now in charge of Dr. Schamberg, and efforts are being made for his deportation to Hawaii, the place of his nativity.

Internships at Blockley.—The examinations for resident internes in the Philadelphia Hospital will be held early in April. The number of appointments to be made are 19, and these will be made in strict accordance with the average attained in the civil service examinations. Heretofore, equal representation in all medical colleges on the staff of internes had been assured. Now the men are to be appointed absolutely in accordance with the average attained.

Maragliano Can Not Come.—A cablegram received from Professor Maragliano by the Henry Phipps Institute, under whose auspices he was to lecture March 28, announces his sickness and inability to come. An abstract of his paper will be read at a luncheon to be given Monday by Dr. L. F. Flick to the delegates to the meeting to consider the tuberculosis congress situation. The delegates will also be entertained at dinner Monday by the Henry Phipps Institute. (The meeting of this committee is mentioned on the next page.)

Health Report.—There has been little or no abatement of typhoid fever during the past week. This has not been looked for. In fact, a large increase in cases was expected owing to the bad condition of the drinking water during the past few weeks. During the last week 141 new cases were reported, which is one less than reported during the preceding seven days. There were 21 deaths from typhoid, a decrease of 4 from last week. Smallpox is on the decline, the whole number of cases reported being 30. This is 18 less than the previous week. There were 7 deaths from smallpox, an increase of one over the preceding week. The deaths from all causes numbered 634. This is a decrease of 75 from those of last week and an increase of 99 over the corresponding week of last year.

Symptoms of Contagious Diseases.—Dr. Jay F. Schamberg lectured to the principals and teachers of the public schools

on "Symptoms of Smallpox, Scarlet Fever and Measles." He said that more than 3,000 cases of smallpox have been treated since 1900 at the Municipal Hospital. Of this number not one individual had been recently successfully vaccinated. Moreover, not one patient received had a good scar of vaccination. The patients admitted comprised two classes: Those never successfully vaccinated, and adults not vaccinated since infancy or childhood. These statements, he said, held good for more than 8,000 smallpox patients treated by Dr. Welch in the Municipal Hospital during the last 33 years. During the past three years 120 nurses have been employed at the hospital, and not one has been affected with the disease. He said there was greater danger to an individual walking on the streets of a large city than in being vaccinated. In this city, from 1901 to 1903, 665 persons died of smallpox. Every one of these lives could have been saved. The man who refuses to have his children vaccinated is guilty of criminal negligence. In conclusion, he advised that teachers and parents should heartily co-operate with the department of health in the matter of school inspection in its crusade against disease.

GENERAL.

HALF FARE TO ATLANTIC CITY.

[By Special Telegram.]

Trunk Lines Grant Low Rate, and Other Associations Expected to Follow.

As THE JOURNAL goes to press, a telegram is received with the following announcement:

The Trunk Line Association has just granted a half-rate fare to the next session of the American Medical Association, and recommends that all other passenger associations do likewise. This means a half rate from practically all over the country. It is the first time that the Trunk Line Association has done better than a one and one-third rate; it has refused until to-day to do better this year. This rate means doubling the attendance at the Atlantic City session.

Personal.—Dr. T. Aoyama, dean of the Japanese National Medical University of Tokio, a prominent surgeon of Japan, has been visiting the United States on his way home from a period of study in Berlin.

Porto Ricans Want Medical Officers on Steamers.—The Ponce branch of the Chamber of Commerce of Porto Rico protests against the monopoly which controls trade with the United States, and mentions the lack of medical officers on the steamers. They suggest that regulations be made compelling boats engaged in passenger traffic to carry medical officers and necessary medicines and appliances.

Tuberculosis Congresses.—Dr. William Osler, chairman, and Dr. Henry B. Jacobs, secretary, announce that at a meeting of the tuberculosis committee (appointed at the Baltimore Exhibition), held in New York, February 27, it was decided to refer to a larger gathering the discussion of the question relating to organizations for the study of tuberculosis in this country. A meeting will be held for this purpose at the College of Physicians, 13th and Locust streets, Philadelphia, March 28, at 3:30 p. m.

October Health in Philippine Islands.—The rate of mortality in the Philippine Islands during October last was five times greater among the Filipinos, and nearly two and one-half times greater among the Chinese than among the combined American, Spanish and other European population. The poverty of the poorer classes is partially responsible for this. The authorities are endeavoring to secure better sanitary conditions and to prevent overcrowding. Of the total 1,279 deaths, 654, or 51.8 per cent., occurred within the first year of life. Eliminating cholera, which did not affect infants under one year, the infant mortality was 57.3 per cent. of the total. To reduce this infant mortality popular circulars, giving rules for the care of the newborn and for the feeding of infants, are being distributed. The more important causes of deaths were as follows: Infantile convulsions, 383; pulmonary tuberculosis, 110; cholera, 104; eclampsia, non-puerperal, 72; bronchitis, 117; diarrhea and enteritis, 56; congenital debility, 35; typhoid fever, 14. Pneumonia caused 5 deaths, bubonic plague, 2. The campaign of inspection and of extermination of rats to prevent plague is being carried on vigorously. A portable steam and formaldehyd disinfecting chamber, mounted on trucks, was ordered.

CANADA.

Vaccination in Montreal Schools.—The Montreal Health Department's report of school vaccinations shows that this season few scholars refused to undergo vaccination. In all 20,736 vaccinations were performed, there being absent from the schools 721 when the vaccinators called.

A Consumption Sanitarium for Hamilton, Ont.—At a public meeting at Hamilton, Ont., March 15, it was decided to organize a branch of the National Sanitarium Association. The medical health officer of Hamilton, Dr. Langrill, favored erecting a sanitarium on the brow of Hamilton mountain.

Deaths in Ontario for January.—The Ontario deaths in January were 2,188, or at the rate of 13 per 1,000, as against 2,150 in January, 1903, when the rate was 12.8. There were 102 cases of smallpox, as against 196 a year ago. Scarlet fever cases numbered 379 as against 500 in January, 1903. The deaths from contagious diseases were: Scarlet fever, 24; diphtheria, 50; measles, 2; whooping cough, 7; typhoid, 23; tuberculosis, 187.

Hamilton Hospital Rates.—The rates in the public wards of Hamilton General Hospital will be lowered from $3 to $2.80 per week. The difference, it is expected, will be more than made up by the additional government grant of 20 cents per day, for all patients paying under $6 per week. Private ward patients will hereafter pay $4.20 and $7 per week, instead of $4 and $6 per week. These changes will considerably increase the hospital's revenue. There is now considerable erysipelas in this hospital.

Furnishing the Toronto Free Consumption Hospital.—A meeting was held last week to make preparation for furnishing the Toronto Free Hospital for Consumptives, situated ten miles beyond the city limits. It was announced at this meeting that a site near the University of Toronto medical buildings had been secured for a dispensary building, from which free medicines will be dispensed for consumptives. A staff of nurses will also be maintained. The reports submitted showed that the National Sanitarium Association has thus far expended upward of $400,000 on this work in Ontario, of which $180,000 had gone into the building fund. Altogether 1,000 patients have been treated, and of 32 consumptives who were cured five years ago, 31 are now living. A large committee was formed to raise funds for the Toronto institution. The hospital is to be used for persons in the advanced stage.

FOREIGN.

Plague in Africa.—Bubonic plague has broken out in the Indian coolie district of Johannesburg, South Africa. Forty-two deaths have occurred.

Japanese Aid Virchow Memorial.—Four hundred dollars were recently received from Japanese physicians as a contribution to the fund to erect a memorial to Virchow at the Charité, Berlin.

Money for Medical Colleges.—Sir Donald Currie, one of the pioneers in the opening up of South Africa, has given $500,000 to the University College Hospital, London, Eng., for new medical buildings.

Anti-alcohol Colony in Italy.—The *Riforma Medica* announces that an English capitalist, named Charrington, has purchased an island off the coast of Italy to found thereon an anti-alcoholic colony.

Radium Treatment of Cancer Abandoned.—It is announced that the use of radium for the treatment of cancer has been discontinued at the London Cancer Hospital, and that attention will now be devoted instead to the use of high frequency apparatus. Radium did not seem to be of benefit.

Prize for Elimination of Intoxicating Properties of Alcohol.—The Russian minister of finance offered, just before the outbreak of the war, a prize of $25,500 for the discovery of a "denaturating" substance for alcohol which leaves no mineral residuum, does not contain caustic or poisonous elements and does not impart a repellent odor.

Second Latin-American Medical Congress.—April 3 to 10, 1904, is the date appointed for the opening of the Latin-American Congress of Medicine and Hygiene to be held at Buenos Ayres, Argentina. The exposition connected therewith is to remain open through April and May. It has been planned on an extensive scale.

"Consul" is Dead.—The trained chimpanzee, "Consul," valued at $125,000, succumbed recently to an acute lung affection at Berlin. He put up at good hotels and always had a room to himself, with engagements booked for two years in advance at a monthly salary of $4,000, and his life was insured for

$100,000. The *Gazette Méd. de Paris* has devoted considerable space during the last few months to descriptions of this almost human creature.

Children Summoned to Inspect Mad Dog.—A veterinary surgeon in a French town having a mad dog under observation sent for the children of the schools to come and inspect it. He did this to combat the general idea that a dog is not mad unless he is foaming at the mouth, etc. The children found this animal lying quietly in its cage, its mouth and tongue merely parched and feverish, and yet it was known to be a typical case of rabies.

Scotch Generosity.—The *Riforma Medica* states that the ophthalmologist, Prof. T. Reid of Glasgow, has presented $29,100 to the ophthalmic clinic at Turin, in charge of Professor Reymond, for the advancement of science, to aid in purchasing instruments and in paying the salaries of the officials connected with the clinic. His friendship for Professor Reymond is the motive for the endowment, and during his lifetime he is to receive an annual 3 per cent. interest on the sum.

Memorial to Hanot.—The *Archives Générales de Médecine* has opened a subscription to erect a memorial to its former editor, professor agrégé, V. Hanot, whose tragic death in 1896 will be remembered. The bust or tablet will be erected at the scene of his labors in the Saint-Antoine Hospital, Paris. The committee in charge ask for the names of friends and pupils of Hanot who might like to co-operate in this tribute. Address Hotel des Sociétés Savantes, 28 rue Serpente, Paris, France.

Suit for Return of Fees.—The professor of gynecology and obstetrics at the Russian university of Dorpat maintains a private hospital at Odessa. He received a wealthy patient into his hospital for an operation, and a fee of $102 was paid in advance. The patient died almost at once after the operation, and the family sued for the return of the money. Professor Solovieff declined to return it, saying that he had been to great expense in preparing for the operation. The local court has ordered him to return one-half the amount.

Battle of the Clubs in Italy.—At Biella, upper Italy, the medical officers of a mutual aid society were remunerated at the rate of four cents a visit, and not only forfeited this amount if they did not arrive at the bedside within half an hour of the summons, day or night, but were obliged to pay the fee of another physician summoned in their place if they failed to respond promptly. This state of affairs having proved unbearable, they have resigned and the other members of the profession are standing by them in refusing to accept positions in the society. One Italian exchange has coined the term "boycottaggio," whose origin is obvious, to express this concerted action on the part of the profession.

Proposed Hospital for Temporary Disability.—Babinski of Paris suggests the foundation of a hospital for semi-invalids, that is, for persons who are unable at times to work on account of temporary disability from exacerbation of some latent chronic affection. This asylum should also be open to such infirm persons for temporary shelter outside of exacerbations, if they find it impossible to obtain work. The shelter and the food provided should not be of such a character as would tempt them to linger in the asylum when they can do better outside. The inmates should only be admitted on presentation of a card given to them after a thorough medical examination. This intermediate station between the night shelters and the hospitals would relieve the latter of much trouble and expense, while it would prove a boon to many of these semi-invalids. It would also serve to eliminate the frauds.

The Russian Red Cross Society.—A French exchange states that the Russian Red Cross Society was founded in 1860 at Moscow, and now has more than 600 organized committees, 42 hospitals, 2 training schools for nurses, 8 soldiers' homes, one home for widows, 4 for orphans of soldiers and 2 sanatoria for children. There are more than 4,000 women nurses and a battalion of men nurses. Our Russian exchanges have contained of late many notices of the way in which relief work for the war has been systematically proceeding. The Red Cross supplies at Charbin now include nearly $40,000 worth of materials for dressings; they have medical supplies for 30,000 beds. Beside this, 26 field hospitals have been set up with 5,050 beds. To each 500 beds there are 5 physicians, one administrator, 15 women nurses, and 30 other attendants. Six of these have already been installed at Charbin. The society is being constantly and lavishly supplied with gifts of linen, preserves, wines and other delicacies with contributions of money. Holland is preparing a field hospital, and another is being equipped by Russians resident at Berlin, which will soon start for the seat of war.

Isolation of Consumptives in Paris Hospitals.—Sweeping changes are contemplated by the executive committee in charge of the Paris hospitals in order to conform to the ministerial decree in regard to the strict isolation of consumptives (mentioned in an editorial last week under the heading of "Tuberculophobia"). It is proposed to transform four of the hospitals, the Laennec, Hotel Dieu annex, Broussais and Bastion 27, into specials to receive tuberculous subjects only. This will supply 1,184 beds, with 909 additional in special pavilions in four other hospitals and 1,850 in four others, either extramural or in process of construction. There will thus be a total of 3,776 beds for subjects with pulmonary tuberculosis. They will be supplemented by 2 special dispensaries for tuberculosis in connection with the Laennec and Tenon hospitals. The scheme requires the suppression of twenty-two medical services, two surgical and one obstetric, and a radical revolution in several other respects. The local medical press does not regard the project with much favor, but is loyal in its support of the laudable intentions which have inspired the agitation of the subject. The suggestion to isolate the cases of "open tuberculosis" in a ward by walling off one end of the ward with glass partitions was offered by the Société Médicale des Hôpitaux as a simple and practical solution of the question, as mentioned in these columns, February 13. It has not been considered by the authorities as sufficiently radical.

Destruction of Rats in France.—The ravages caused by the field rats in agricultural districts of France have caused the government to take up the matter. A bill has been submitted by the government to the chamber of deputies providing for the issue of bonds to raise $70,000 to be applied to the destruction of field rats. Experiments have recently been made on a large scale in la Charente where a large tract of land—about 3,000 acres—was honeycombed with rat holes. The work was in charge of Danysz and Chamberland of the Pasteur Institute. Cultures of the bacillus which Danysz has found is pathogenic for field rats were spread on bread or oats and distributed in and near the rat holes. Over 10,000 pounds of bread and twice this amount of oats and 1,200 bottles of the virus were used. The results showed that 95 per cent. of the rats had been destroyed. The campaign progressed without mishap and no domestic animals were injured. It is unfortunate that no virus has yet been discovered effectual against the town rat, which is much more resistant. Roux believes that the prospects are bright for this achievement in the near future. The legislation now in progress contemplates that the land owners must pay a certain proportion of the expense of the anti-rat campaign. Rats are not only concerned in the transmission of the plague, but also of trichinosis. Certain epizootics are likewise due to them, as they transmit the germ, although they do not contract the disease. The Danysz cultures are perfectly harmless for persons handling them and for domestic animals.

LONDON LETTER.

The Middlesex Hospital and Cancer Research.

The Middlesex Hospital alone among the general hospitals of London devotes and reserves a number of its beds for the reception of the metropolis cases of cancer and lately has established a cancer research laboratory, which is under the direction of Dr. Lazarus Barlow. During the past year 100 cases of cancer have been treated with 3,040 applications of the *x*-rays, with results decidedly encouraging. In the large majority pain was diminished, if not dissipated, in a considerable number the disease was retarded, and in a few it underwent marked retrogressive changes. Radium has been tried, and several cases of lupus and rodent ulcer have healed more rapidly under it than under the *x*-rays or violet light. One branch of work for which the laboratory staff is responsible is the testing of the many alleged cancer cures brought forward from time to time. A considerable amount of time is thus spent without any corresponding advantage. Recently attention was widely drawn to the successful results alleged to have been obtained from Dr. Otto Schmidt's serum treatment. At the Abernethian Society of St. Bartholomew Hospital a physician who had been to Cologne and studied under Dr. Schmidt reported most gratifying results. His paper and the discussion which followed occupied more than five pages of the *Lancet*, and that journal devoted a lengthy editorial to it, though regarding its value as unproved. The experience of the Middlesex Hospital relegates this remedy to the place of all cancer cures. Nine patients voluntarily submitted to the injections. All that could be said of the specific was that it did no harm.

Correspondence.

"English Bards and Scotch Reviewers."

PHILADELPHIA, March 17, 1904.

To the Editor:—In THE JOURNAL March 12, you "review" "Biographic Clinics," Vol. II. If you had taken the ordinary precaution of reading the volume doubtless you would have avoided the many misstatements, misquotations, and inaccuracies which destroy any possible value of your article as criticism. The volume will scarcely come into the hands of all the readers of THE JOURNAL, and fair play demands that, in the interests of impartial and dispassionate criticism, some, at least, of these misstatements and misquotations be pointed out.

1. You repeatedly speak of "the fourteen patients" whose cases are considered in the volume. There are but nine.

2. I did not "guess" that Parkman had ametropia; I demonstrated it by the prescriptions of his oculist.

3. You say that I include cancer as one of the diseases caused by eyestrain. There is not a line in the book authorizing this statement.

4. You aver that I refrain from telling what proportion of symptoms mentioned is caused by eyestrain. This is untrue.

5. In quotation marks you speak of some writing of mine called, "Why glasses did not fit." The phrase is unworthy the knowledge of even a first-year medical student. No essay of mine with such a title exists.

Your review is proved incompetent and your "criticism" worthless because:

A. You do not even mention the great contention of the volume—the demonstrated production of morbid symptoms by reading and writing and the immediate relief by stopping this near use of the eyes.

B. You do not even allude to the proofs that migraine may be the result of eyestrain: (a) the testimonies of public patients; (b) the testimonies of many American oculists; (c) my own testimony of the large number of patients I have cured by glasses alone.

C. You ridicule the work and assertions of "diligent and energetic ophthalmologists" and gibe at their emphasis of the reflex results of eyestrain, ignoring the fact that the oculists who believe in these results have, in comparison with THE JOURNAL and the reviewer, the better right to their opinion which comes from affirmative experience. It requires little knowledge, less experience, and no intellect, to echo musty traditions and "accepted views," but advancement comes not by that path.

D. You fail to name any of the "innumerable," the "uncountable," the "thousand," the "all," articles, papers, reprints, text-books, in which have appeared this theory as to eyestrain which you alternately deride as a "new doctrine" and announce as having been "persistently preached in medical journals any day these twenty years." My knowledge of ophthalmologic literature should, presumably, be at least as great as yours, but I would greatly appreciate the naming of but one poor hundred among the thousands to which you negligently allude.

E. You have not demonstrated your right to lecture the specialist on "the narrowing effect of his specialty" by proof of your own wide knowledge of medicine in all its directions and history, nor by the slightest evidence of unbiased judgment. This is particularly necessary in one who measures knowledge by negation instead of affirmation. GEO. M. GOULD.

[1. There were, in all, fourteen important personages mentioned in volume II. whose symptoms were assumed to depend almost entirely on eyestrain; nine of these were considered at length in this volume. The ill health of the other five had been considered at greater length in a previous volume. In volume II. Dr. Gould frequently refers, as we did, to these fourteen.

2. Dr. Gould was not accused of "guessing" that Parkman had ametropia; it was, however, asserted that our "guess" (that the historian suffered from an asthenopia aggravated by or mostly due to neurasthenia) was quite as near the truth (or as far removed from it) as the author's, viz.: that his years of ill health were due to eyestrain curable by glasses.

3. We apologize to Dr. Gould for including cancer in the catalogue of evils (rheumatism, erysipelas, suicide, etc.), mentioned by him as the possible results of eyestrain. As he had mentioned cancer a few lines before and as it seemed to us quite as probable that eyestrain *might* produce rheumatic arthritis as this malignant neoplasm, we thoughtlessly added it.

4. If so we have searched his book in vain.

5. The exact title is "Sixty-eight reasons why 'glasses did not give relief.'"

A. We do not accept the statement that a patient's symptoms are inevitably due to eyestrain (curable by glasses) because some or even all of them are relieved by cessation from near work or because they are again brought on by renewed employment of the eyes. Everybody knows that many other conditions—neurasthenia, diseases of lids, heterophoria, lesions of the interior of the eye, etc.—may prevent the comfortable use of the visual organs. We have already insisted on that in some fourteen lines of fine print—one for each patient.

B. We have nowhere denied that now and then migraine is of ocular origin. We placed the proportion of cases curable by spectacles at less than 10 per cent. and declared that ophthalmologists and neurologists generally agree with us and not with Dr. Gould, who says (page 123, Vol. II.), "I have had thousands of patients with this disease (migraine) and 99 out of every 100 were cured by spectacles."

C. It was far from our intention to ridicule the belief in the reality of eyestrain and its consequence. We plead, however, for a saner view of the situation than that taken by Dr. Gould, who, in our judgment, greatly exaggerates the rôle of this factor in producing disease.

D. We stated that the "main facts of ametropic and heterophoric viciousness" have been published broadcast throughout this and other lands for many years and, in our opinion, have long been known, especially to the members of the medical profession in America. The demand for a "poor hundred" articles on the subject could (had we the space for them) easily be met by selections from the ophthalmic literature of the past few years—a period when the subject has become so utterly commonplace that few observers consider it worth their while to write on it.—ED.]

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

CHARGES FOR SERVICES TO PHYSICIANS AND THEIR FAMILIES.

TENNESSEE, March 11, 1904.

To the Editor:—Please answer, without using my name, the following: A physician is called on to attend a confinement. The woman's husband attended a medical college last year in his senior year, and applied for graduation, but failed to graduate. He was engaged at the time, and continuously since, in an occupation in no way connected with the practice or study of medicine. It is probable that, after legitimate professional expenses are deducted, his salary is equal to or exceeds the income of the physician who attended his wife. The physician remained with the woman from early morning until dark of one day, losing the entire day. The physician is employed for several hours each day in public health work at a per diem salary which is lost on the day referred to. Will you express an opinion as to (1) whether or not a fee ought to be charged; (2) is there anything in the Principles of Ethics to cover such cases? ——— L.

ANSWER.—1. Yes. 2. Yes. The Principles of Ethics say that gratuitous services should be limited to practicing physicians, their immediate family dependents, persons in indigent circumstances and certain public duties (sanitation and public hygiene).

CAISSON DISEASE.

DETROIT, March 19, 1904.

To the Editor:—1. Can you tell me how I can get in touch with any available literature which treats of the pathology and treatment of diseases which are common to workmen in compressed

air? 2. Do you know who publishes "Articles by Paul Bert" on the subject of compressed air? E. E. BRATTON.

ANSWER.—1. In Oliver's "Dangerous Trades" (E. P. Dutton & Co., New York City, 98), pages 726 to 737 discuss the subject. Most text-books on the practice of medicine give some space to it. A long list of references is given in the Index Catalogue of the library of the Surgeon General's office. You might address one of those mentioned in THE JOURNAL, Dec. 19, 1903, page 1553. 2. No. These appeared about thirty years ago.

SMALLPOX AND CHICKEN-POX.

ALABAMA, March 13, 1904.

To the Editor:—1. Is it possible for the eruption of varicella to so simulate variola as to invade the palms of the hands? 2. Is it possible for a patient to have variola without pains in the head, back or legs or other symptoms other than slight fever and eruption? 3. Give full differential diagnosis between smallpox (variola) and chicken-pox (varicella). SUBSCRIBER.

ANSWER.—1. Yes. 2. Yes. 3. We must refer you to any good text-book for this information.

STATES REQUIRING LICENSES TO PRACTICE.

NORTH CAROLINA, March 18, 1904.

To the Editor:—Please send me a list of all the states that do not require a license to practice medicine. D. S.

ANSWER.—All states and territories except Alaska require licenses.

Marriages.

JACOB L. ALBRIGHT, M.D., to Miss H. Mabel Evans, both of Chicago, March 9.

DAVID SALINGER, M.D., Chicago, to Miss Amalie Frisch, at Baltimore, March 7.

NEVIN D. PONTIUS, M.D., Seattle, Wash., to Miss Edith B. Cole of San Francisco, March 2.

FRANK T. SIMONTON, M.D., Ellsworth, Maine, to Miss Marion Thayer of Charleston, Maine, March 8.

JOHN J. HANNA, M.D., Victoria, Texas, to Miss Georgiana Houser of Lincoln, Ill., at New Orleans, March 11.

Deaths.

William H. Hawkes, M.D. University of Pennsylvania, Philadelphia, 1874, a member of the American Medical Association; professor of materia medica and therapeutics, Georgetown University; member of the American Academy of Medicine, Medical Association of the District of Columbia, Medical Society of the District of Columbia; attending physician, Emergency Hospital; consulting physician, Providence Hospital; at one time assistant surgeon in the Army, died at his home in Washington, D. C., March 13, from acute gastritis, after an illness of two hours, aged 58.

William Frederick Holcombe, M.D. Albany (N. Y.) Medical College, 1850, of New York City, at one time professor of diseases of the eye and ear in New York University Medical College, New York Ophthalmic College and Hospital, and New York Medical College for Women; one of the founders of the New York Genealogical and Biographical Society and a member of the International Medical Congress, died in the Presbyterian Hospital, New York, March 17, after a short illness, aged 76.

Moreau Morris, M.D. College of Physicians and Surgeons, New York, 1848, a member of the American Public Health Association, health commissioner in 1866, and special medical inspector to all institutions for children; for thirteen years surgeon of the Seventh Regiment, N. G., N. Y., and later of the Seventh Veterans' Association, died at his home in New York City, March 17, aged 78.

Julius J. Kempe, M.D. Albany (N. Y.) Medical College, 1868, a member of the American Medical Association, for more than thirty years an esteemed practitioner of Rochester, N. Y.; a member of the Rochester City Hospital staff, and of the Monroe County Medical Society, who moved to Florida on account of ill health, in June, 1903, died at Pinellas, Fla., March 7, aged 60.

Dan Peaslee Webster, M.D. University of Vermont, Burlington, 1867, some-time postmaster of Brattleboro, member of the legislature from Putney in 1872 and 1874, and senator from Windham County in 1878, surgeon general of Vermont for two administrations, died at his home in Brattleboro, Vt., March 13, from Bright's disease, after a long illness, aged 57.

Hans Herman Behr, M.D. University of Berlin, Germany, 1843, scientist, entomologist and savant; who was given the degree of doctor "Honoris Causa," by his alma mater in 1896; vice-president and curator of the San Francisco Academy of Sciences in 1864, died at his home in San Francisco, March 13, aged 85.

John P. Edge, M.D. Jefferson Medical College, Philadelphia, 1846, a member of the state legislature from 1875 to 1878; originator of the bill establishing the State Board of Agriculture; a member of the county and state medical societies, died at his home in Downingtown, Pa., March 7, aged 81.

M. Thomas Brennan, M.D. Laval University, Quebec, 1884, professor in Laval University, gynecologist to Notre Dame Hospital, Montreal, a member of the Fourteenth International Medical Congress, died at his home in Montreal, March 12, from pneumonia following influenza, aged 42.

William Henry Seton, M.D. University of Maryland, Baltimore, 1898, a member of the American Medical Association, formerly of New York City, who went to Arizona on account of ill health two years ago, died at his home in Phoenix, February 11, from spinal meningitis, aged 31.

Leander Swartwout, M.D. Albany (N. Y.) Medical College, 1850, a veteran of the Civil War; member and some-time president of the Oneida County and New York State medical societies; once coroner of the county, died at his home in Prospect, N. Y., March 11, aged 61.

Spottswood Wellford Carmichael, M.D. Jefferson Medical College, Philadelphia, 1852, the third in direct line of his profession in the same town; a surgeon in the Confederate service, died at his home in Fredericksburg, Va., March 18, after an illness of one year, aged 73.

William Gulick, M.D. College of Physicians and Surgeons of the Western District of New York, Fairfield, 1837, formerly assemblyman, and once president of the State Board of Health, died at his home in Watkins, N. Y., March 16, from pneumonia, aged 90.

James S. McCorkle, M.D. University of Nashville, 1860, repeatedly mayor and recorder of Newbern, and for 25 years president of the local board of education, a confederate veteran, died at his home in Newbern, Tenn., from influenza, March 11, aged 66.

R. Edgar Zachary, University of North Carolina, Chapel Hill, 1897, M.D. North Carolina, 1898, of Wilmington, N. C., died at the James Walker Memorial Hospital in that city, from peritonitis, after an operation for appendicitis, March 12, aged 28.

Nathaniel T. Palmer, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1842, one of the founders of the Maine Medical Association, who had practiced in Brunswick for 59 years, died at his home in that city, March 18, aged 87.

James Brownlee Sanford, M.D. Baltimore University, 1900, a member of the American Medical Association, and speaker of the Colorado House of Representatives, died at his home in Denver, March 16, from appendicitis, aged 35.

W. B. Powell, M.D. Medical College of the State of South Carolina, Charleston, 1850, died at his home, Ebenezer, near Rock Hill, S. C., March 7, from gastritis, after an illness of two or three months, aged 76.

John Marion Watkins, M.D. Tulane University, New Orleans, 1871, a member of the American Medical Association, who had been in ill health for several years, died at his home in Opelika, Ala., March 12, aged 60.

Thomas K. Moore, M.D. Transylvania University, Lexington, Ky., 1841, died at his home in Bolivar, Tenn., where he had practiced for more than 60 years, March 10, after a long illness, aged 86.

C. E. Bernhard, M.D. Kansas City (Mo.) Medical College, 1884, of Visalia, Cal., died at his home, Deer Creek, Hot Springs, Cal., March 9, from pneumonia, after an illness of one week, aged 47.

John B. Harmon, M.D. University of Pennsylvania, Philadelphia, 1886, formerly of Pueblo, Colo., died from pneumonia at Waterloo, Iowa, March 15, after an illness of four days, aged 38.

James M. Duncan, M.D. Missouri Medical College, St. Louis, 1876, died at his home in Kansas City, Mo., March 11, aged 65.

Henry S. Farnsworth, M.D. University of Vermont, Burlington, 1860, died at his home in Clinton, Iowa, March 17, aged 71.

Asariah Judson, M.D. Berkshire Medical College, Pittsfield, Mass., 1845, died at his home in Athens, Pa., March 3, from paralysis, after an illness of several months, aged 82.

Henry Newell Small, M.D. Hahnemann Medical College, Chicago, 1866, died at his home in Chicago, March 15, from cerebral hemorrhage, after an illness of two days, aged 62.

John Edward Janney, M.D. University of Virginia, Charlottesville, 1874, died at his home in Winchester, Va., March 20, from chloroform accidentally self-administered.

Henry B. Eddy, M.D. Ohio Medical University, Columbus, 1900, died at his home, Shadyside, Bellaire, Ohio, March 16, from consumption, after an illness of one year.

James S. Whitaker, M.D. Jefferson Medical College, Philadelphia, 1879, died recently at his home in Cherry Hill, Md., from neuralgia of the heart, aged 56.

Middleton Stuart Hanckel, M.D. Medical College of the State of South Carolina, Charleston, died at his home in New York City, March 12, aged 75.

Robert H. Wyche, M.D., who retired from practice 35 years ago, died at his home in Cool Springs Township, Iredell County, N. C., March 6, aged 80.

Philander S. Brewster, M.D. Pennsylvania, died at his home in West Berwick, Pa., March 5, from paralysis, after an illness of two years, aged 73.

William F. Coates, M.D. Tulane University, New Orleans, 1856, died at his home in Wills Point, Texas, March 13, after a prolonged illness.

J. Henry Robinson, M.D. Albany (N. Y.) Medical College, 1856, died recently at his home in Southboro, Mass., and was buried March 14.

Endymion S. Brown, M.D. Cleveland Medical College, 1869, died at his home in Newark, Ohio, March 12, after a long illness, aged 74.

Warren T. Dameron, M.D. University of Louisville, 1849, of Lexington, Mo., died in La Junta, Colo., from paralysis, March 6, aged 83.

William G. Carter, M.D. Harvard University Medical School, Boston, 1869, died at his home in Concord, N. H., March 10.

James Sanford, M.D. Jefferson Medical College, Philadelphia, 1857, died recently at his home in Collierstown, Va., aged 74.

George H. Neal, M.D. Hahnemann Medical College, Chicago, 1881, died at his home in Falls City, Neb., March 15.

Newton H. Curtiss, M.D. Syracuse (N. Y.) University, 1878, died recently at his home in Manlius, N. Y.

J. George Battell, M.D. Trinity Medical College, Toronto, 1898, of East St. Louis, Ill., died March 10.

Josiah B. Fox, M.D. Ohio, died at his home in Cleveland, March 10, aged 68.

Deaths Abroad.

A. Spiess, M.D., editor of the German quarterly for public health, and noted for his numerous works on matters affecting the public health, died at Frankfurt, February 1, aged 71.

J. J. Flores, M.D., formerly minister of the interior in the Republic of Costa Rica, and dean of the faculty of medicine at San José, died there February 2.

State Boards of Registration.

COMING EXAMINATIONS.

Regular Board of Medical Examiners for Georgia, Atlanta, March 30; Augusta, April 2. Secretary, I. H. Goss, M.D., Athens.

Arizona Board of Medical Examiners, Phoenix, April 4. Secretary, Wm. Duffield, M.D., Phoenix.

Utah State Board of Medical Examiners, Salt Lake City, April 4. Secretary, R. W. Fisher, M.D., Salt Lake City.

Board of Medical Examiners of Montana, Helena, April 5. Secretary, Wm. C. Riddell, M.D., Helena.

North Dakota State Board of Medical Examiners, Grand Forks, April 5. Secretary, H. M. Wheeler, M.D., Grand Forks.

Board of Medical Examiners of the State of California, City Hall, San Francisco, April 5. Secretary, Geo. G. Gere, San Francisco.

Idaho State Board of Medical Examiners, Boise, April 6. Secretary, R. L. Nourse, M.D., Hailey.

Minnesota State Board of Medical Examiners, State Capitol Building, St. Paul, April 5-7. Secretary, C. J. Ringnell, M.D., Minneapolis.

Tennessee State Board of Medical Examiners, Memphis, Nashville and Knoxville, April 6-7. Secretary, T. J. Happell, M.D., Trenton.

Illinois State Board of Health, Chicago, April 6-8; April 25-27, and East St. Louis, May 4-6. Secretary, J. A. Egan, Springfield.

Rhode Island State Board of Health, State House, Providence, April 7-8. Secretary, Gardner T. Swarts, M.D., Providence.

State Medical Board of the Arkansas Medical Society, Little Rock, April 12. Secretary, J. P. Runyan, M.D., Little Rock.

Missouri State Board of Health, Kansas City, April 12-14. Secretary, W. F. Morrow, M.D., Kansas City.

West Virginia State Board of Health, Clarksburg, April 13-14. Secretary, Hugh A. Barbee, M.D., Point Pleasant.

Vermont State Board of Medical Censors, Y. M. C. A. Building, Rutland, April 13-14. Secretary, S. W. Hammond, M.D., Rutland.

Board of Medical Supervisors of the District of Columbia, Washington, April 14. Secretary, Wm. C. Woodward, M.D.

Board of Medical Examiners for the State of Texas, Austin, April 21-23. Secretary, M. M. Smith, M.D., Austin.

State Board of Medical Examiners of Iowa, April 14-15 at Keokuk, April 20-21 at Des Moines. Secretary, J. F. Kennedy, M.D., Des Moines.

Arkansas Report.—Dr. J. P. Runyan, secretary of the State Medical Board of the Arkansas Medical Society, reports that at the written examination held at Little Rock, Jan. 12, 1904, 70 questions were asked on 7 subjects, and a percentage of 60 was required. Of the 14 who were examined 11 passed and 3 failed; 4 who passed and 2 who failed were graduates, the rest were not graduates.

PASSED.

College.	Year Grad.	Per Cent.
Kansas City Medical College	(1880)	75
Vanderbilt University	(1903)	83
Indiana Physiomedical College	(1900)	64
University of Pennsylvania	(1898)	85

FAILED.

Arkansas University		57
University of Louisville		55

Oklahoma Report.—Dr. E. E. Cowdrick, secretary of the Oklahoma Board of Health, reports that at the written examination held at Enid, Dec. 29, 1903, 90 questions were asked on 9 subjects, and a percentage of 66 2/3 in each branch was required. Of the 10 applicants 5 failed, one not being a graduate. Those who passed were from the following colleges:

College.	Year Grad.	Per Cent.
Louisville Medical College	(1887)	84
Georgetown University	(1901)	85
University of Victoria College, Toronto, Canada	(1882)	85
Chicago Homeopathic Medical College	(1897)	83
St. Louis College of Physicians and Surgeons	(1900)	83

The four graduates who failed were from Ky. School of Med., 1876; Bennett Med. Coll., 1887; Keokuk Coll. P. and S., 1898, and Barnes Med. Coll., 1896.

Ohio December Report.—Dr. Frank Winders, secretary of the Board of Medical Registration and Examination of Ohio, reports the written examination held at Columbus, Dec. 8-10, 1903. The percentage required to pass was 75, and 90 questions were asked on 9 subjects; 31 were examined, 28 passed and 3 failed. Those who were graduates were as follows:

PASSED.

College.	Year Grad.	Per Cent.
University of Michigan	(1901) 93, (1902)	83, 91
Grand Rapids Medical College, Michigan	(1903)	75
Medical College of Ohio	(1879)	77
University of Buffalo	(1891)	90
Western Pennsylvania Med. Coll., Pittsburg	(1887)	82
University of Pennsylvania	(1902) 87, 90, (1903)	94
Johns Hopkins University	(1903)	87, 79
Cleveland College of Physicians and Surgeons	(1903)	87
Jefferson Medical College, Philadelphia	(1903)	85
Illinois Medical College, Chicago	(1903)	81
Rush Medical College, Chicago	(1903)	89
Dartmouth Medical College, Hanover, N. H.	(1900)	87
New York Homeopathic Medical College	(1894)	79
Harvard Medical School	(1900)	86
University of Maryland, Baltimore	(1900)	79
Women's Medical College of Pennsylvania	(1903)	85
University of Naples, Italy	(1902)	75
College of Physicians and Surgeons, Chicago	(1900)	84

FAILED.

University of Louisville, Kentucky	(1894)	69
Hospital College of Medicine, Louisville	(1903)	63

The Public Service.

Navy Changes.

Changes in the medical corps of the Navy, week ending March 19, 1904:

Forebes, N. M., medical director, detached from the Navy Yard, Washington, D. C., and granted sick leave for six months.

Peck, A. E., asst.-surgeon, granted sick leave for two months.

Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the fourteen days ended March 17, 1904:

Wertenbaker, C. P., surgeon, to report at Washington, D. C., for special temporary duty.

Wicken, H. V., P. A. surgeon, granted leave of absence for one day.

Von Esdorf, R. H., P. A. surgeon, to proceed to Delaware Breakwater Quarantine for special temporary duty. Relieved from special temporary duty at Delaware Breakwater Quarantine on account of sickness and directed to rejoin his station at the Hygienic Laboratory, Washington, D. C.

Boggess, J. S., asst.-surgeon, Bureau letter of March 2, granting eight days' leave of absence from Feb. 18, 1904, amended so that said leave shall be on account of sickness.

Simonson, G. T., A. A. surgeon, granted leave of absence for five days from March 15.

Staton, L. W., A. A. surgeon, granted leave of absence for two days from March 8.

Carter, H. R., surgeon, to proceed to New Orleans and attend conference of quarantine officers March 14.

Brooks, S. D., surgeon, Department letter granting leave of absence for four months from April 1, 1904, amended to read four months from April 6, 1904.

Gulteras, G. M., surgeon, Department letter granting leave of absence for three months from Dec. 19, 1903, amended to read two months and five days from Dec. 19, 1903.

McMullen, John, P. A. surgeon, to proceed to Immigration Depot, New York, and report to Surgeon G. W. Stoner for duty.

Grubbs, S. B., P. A. surgeon, granted leave of absence for twelve days from March 18.

Richardson, T. F., asst.-surgeon, relieved from duty at New Orleans and directed to proceed to Laredo, Texas, and assume command of service at that port March 16.

Francis, Edward, asst.-surgeon, to proceed to Delaware Breakwater Quarantine and assume temporary charge of station during illness of P. A. Surgeon C. H. Lavinder March 10.

Bullard, J. T., A. A. surgeon, granted leave of absence for twenty-seven days from March 4.

Moscure, J. A., A. A. surgeon, granted leave of absence for thirty days from April 1.

Mull, R. A., A. A. surgeon, granted leave of absence for seven days from March 1, under Paragraph 210 of the Regulations.

Sibree, H. C., A. A. surgeon, granted leave of absence for five days from March 15.

Simonson, G. T., A. A. surgeon, Bureau letter of March 10, granting leave of absence for five days from March 15, amended to read five days from March 22.

Stanton, J. G., A. A. surgeon, granted leave of absence for thirty days from March 6.

Thornton, E. J., pharmacist, granted leave of absence for seven days from March 9, under Paragraph 191 of the Regulations.

Kolb, W. W., pharmacist, granted leave of absence for twenty-eight days from April 2.

APPOINTMENT.

Dr. Melvin M. Hopkins appointed A. A. surgeon for duty at Ketchikan, Alaska.

BOARDS CONVENED.

Boards convened March 21 as follows for the physical examination of officers of the Revenue-Cutter Service:

At New Orleans: Detail of the board: Surgeon C. P. Wertenbaker, chairman; P. A. Surgeon L. L. Lumsden, recorder.

At San Francisco: Detail for the board: P. A. Surgeon W. G. Stimpson, chairman; Asst.-surgeon Carl Ramus, recorder.

At Port Townsend, Wash.: Detail for the board: P. A. Surgeon J. N. Oakley, chairman; P. A. Surgeon M. H. Foster, recorder.

Board to meet at Washington, D. C., on the call of the chairman for the physical examination of officers for promotion and applicants for admission into the Revenue-Cutter Service. Detail for the board: Asst.-Surgeon-General L. L. Williams, chairman; Asst.-Surgeon-General W. J. Pettus, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended March 18, 1904:

SMALLPOX—UNITED STATES.

California: San Francisco, Feb. 21-28, 5 cases.
District of Columbia: Washington, March 5-12, 2 cases.
Florida: Jacksonville, March 5-12, 2 cases.
Illinois: Belleville, Feb. 26-March 12, 2 cases; March 5-12, Chicago, 1 case; Danville, 1 case; Galesburg, 1 case.
Maine: Madawaska region, Feb. 27-March 5, 11 cases.
Maryland: Baltimore, March 5-12, 2 cases.
Michigan: Detroit, March 5-12, 1 case.
Missouri: St. Louis, March 5-12, 11 cases.
New Hampshire: Manchester, March 5-12, 5 cases.
New Jersey: Camden, March 5-12, 2 cases, 1 death.
New York: March 5-12, Buffalo, 4 cases; New York, 5 cases.
Ohio: Cincinnati, Feb. 26-March 11, 7 cases, 1 death; March 5-12, Dayton, 2 cases, 4 deaths; Toledo, 1 case.
Pennsylvania: March 5-12, Johnstown, 1 case; McKeesport, 1 case; Philadelphia, 48 cases, 6 deaths; Pittsburg, 2 cases, 1 case imported.
South Carolina: March 5-12, Charleston, 1 case; Greenville, 9 cases.
Tennessee: Nashville, March 5-12, 12 cases.
Wisconsin: Milwaukee, March 5-12, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Feb. 20-27, 9 cases.
Belgium: Antwerp, Feb. 14-21, 7 cases, 4 deaths.
Canada: Ontario, 24 localities, Jan. 1-31, 103 cases; Quebec, March 5-12, 3 cases.
France: Marseilles, Feb. 1-29, 25 deaths; Paris, Feb. 20-27, 38 cases, 1 death.
Great Britain: Feb. 20-27, Edinburgh, 16 cases, 13 deaths; Hull, 6 cases; Leith, 3 cases; London, 5 cases; Newcastle-on-Tyne, 5 cases; Nottingham, 14 cases; Glasgow, Feb. 26-March 4, 30 cases, 2 deaths.
India: Bombay, Feb. 9-16, 5 deaths; Karachi, Feb. 7-14, 5 cases, 1 death.
Italy: Palermo, Feb. 20-27, 1 case.
Malta: Feb. 13-20, 1 case, 1 death.
Mexico: March 9, La Cananea, present; Magdalena, 8 cases; Torreon, Feb. 24, epidemic.
Netherlands: Amsterdam, Feb. 20-March 5, 2 cases.
Russia: Feb. 13-20, Moscow, 8 cases, 1 death; Odessa, 2 cases; St. Petersburg, Feb. 13-27, 17 cases, 5 deaths.
Spain: Barcelona, Feb. 1-29, 7 deaths; Santander, Feb. 22-29, 4 cases, 1 death.
Turkey: Constantinople, Feb. 21-28, 5 deaths.

YELLOW FEVER—UNITED STATES.

Texas: Laredo, March 14, 1 case. It is not yet determined whether this case was imported or not. All precautions taken.

YELLOW FEVER—FOREIGN.

Mexico: Merida, Feb. 28-March 5, 1 case, 2 deaths.

CHOLERA.

India: Feb. 6-13, Calcutta, 19 deaths; Madras, 1 death.

PLAGUE—UNITED STATES.

California: Concord, Feb. 29, 1 death. Bacteriologically confirmed March 12.

PLAGUE—FOREIGN.

Egypt: Alexandria, Jan. 30-Feb. 13, 1 case.
India: Bombay, Feb. 9-16, 550 deaths; Calcutta, Feb. 6-13, 45 deaths; Karachi, Feb. 7-14, 69 cases, 34 deaths.

Medical Organization.

Missouri.

JASPER COUNTY ASSOCIATION OF PHYSICIANS AND SURGEONS.—Physicians of the county met at Joplin, February 25, and organized a medical society on the standard plan, with the following officers: President, Dr. John S. Long, Joplin; vice-president, Dr. William Lothian, Joplin; secretary, Dr. Joel E. Johnson, Joplin; treasurer, Dr. William H. Woodson, Webb City, and censors, Drs. James T. Stamey, Chitwood, Colby C. Gentry, Webb City, and Martin T. Balsley, Joplin.

Rhode Island.

RHODE ISLAND MEDICAL SOCIETY.—At the regular quarterly meeting of this society in Providence, March 3, the constitution and by-laws recommended by the American Medical Association was adopted. Dr. John Champlin, Westerly, was appointed delegate to the national association, and Dr. Frederick T. Rogers, Providence, alternate.

Tennessee.

JACKSON COUNTY MEDICAL SOCIETY.—This society was organized at Gainesboro March 14. Dr. S. Benjamin Fowler was elected president; Dr. Henry P. Loftis, vice-president, and Dr. Charles E. Reeves, secretary and treasurer, all of Gainesboro.

Texas.

COLORADO COUNTY MEDICAL ASSOCIATION.—Dr. Walter Shropshire, Yoakum, councilor for the Eighth District, organized a county association at Columbus, March 10, with an initial membership of 15.

FORT BEND COUNTY MEDICAL ASSOCIATION.—This association was organized at Richmond, March 9, and the following officers were elected: President, Dr. J. Clyde Johnson, Richmond; vice-president, Dr. J. Mark O'Farrell, Richmond; secretary, Dr. Sidney M. Lister, Richmond, and treasurer, Dr. H. C. Boone, Fulshear.

HAYS COUNTY MEDICAL ASSOCIATION.—This society was organized at San Marcos with fourteen members and the following officers: Dr. Adam J. Beall, San Marcos, president; Dr. John C. Carpenter, Kyle, vice-president; Dr. Terry Kinney, San Marcos, secretary and treasurer; Drs. James H. White, Kyle, John C. Carpenter, Kyle, and Edgar P. Shelton, Dripping Springs, censors, and Dr. Robert C. Atkinson, San Marcos, delegate to the state association.

NAVARRO COUNTY MEDICAL ASSOCIATION.—Dr. James J. Roberts, Hillsboro, met the physicians of the county at Corsicana, and assisted in the organization of a medical society on the standard plan, with the following officers: Dr. B. W. D. Hill, Dawson, president; Dr. John M. V. Wills, Corsicana, vice-president; Dr. William T. Shell, Corsicana, secretary-treasurer; Dr. Clay Johnson, Corsicana, delegate to state association; Dr. Thomas V. Fryar, Corsicana, alternate, and Drs. Leslie E. Kelton, Corsicana, Wade D. Fountain, Corsicana, and David B. Currie, Kerens, censors.

Society Proceedings.

COMING MEETINGS.

American Association of Pathologists and Bacteriologists, New York City, April 1-2.
Medical Association of the District of Columbia, Washington, April 5.
Tennessee State Medical Association, Chattanooga, April 12.
South Carolina Medical Association, Darlington, April 13.
Medical Association of the State of Alabama, Mobile, April 19.
Medical Society of the State of California, Paso Robles, April 19-21.
Florida Medical Association, Live Oak, April 20.
Medical Association of Georgia, Macon, April 20.
Mississippi State Medical Association, Jackson, April 20.
Texas State Medical Association, Austin, April 26.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 26-28.
Arizona Medical Association, Tucson, April 27-28.

NEW YORK STATE MEDICAL ASSOCIATION.

Special Meeting, held in New York, March 21, 1904.

The President, Dr. William H. Thornton, in the Chair.

[By telegraph from our Special Correspondent.]

The Consolidation Ratified.

A special meeting of the New York State Medical Association was held Monday, March 21, to hear and act on the report of the Committee on Conference with the Medical Society of the State of New York, concerning the proposed union of the two bodies. Dr. E. Eliot Harris, chairman of the committee, read the report and Dr. J. D. Bryant offered the following resolutions:

Resolved, That the report of the joint committee of conference be accepted, and that the proposed agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association be and the same is hereby approved and the president of the association is hereby authorized and directed to execute the same in the name and behalf of the association, and the secretary is hereby authorized and directed to affix the corporate seal thereto, and be it further

Resolved, That the committee of the association heretofore appointed for the purpose of bringing about the consolidation, namely, Dr. E. Eliot Harris, Dr. Julius C. Hierwirth, Dr. Alexander Lambert, Dr. Parker Syms and Dr. Wisner R. Townsend, be and they are hereby continued as such committee, with full power and authority to do whatever may be necessary to carry the agreement into effect.

On motion these were unanimously adopted.

Action was also taken requesting the county associations in affiliation with the state association to ratify this action.

Thus the two state bodies have each unanimously voted in favor of amalgamation on the plans recommended by the joint committee.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Special Meeting, held March 21, 1904.

[By telegraph from our Special Correspondent.]

State Association's Action Endorsed.

Following the session of the New York State Medical Association reported above, the New York County Medical Association met and unanimously voted to ratify the action taken by the state association in approving the joint committee's plans for union. The resolutions passed were as follows:

Resolved, That the New York County Medical Association hereby ratifies, approves and adopts the agreement for the consolidation of the Medical Society of the State of New York and the New York State Medical Association, which was unanimously approved and adopted at the annual meeting of the Medical Society of the State of New York, held at Albany, Jan. 26, 1904, and by the New York State Medical Association at a special meeting held in New York City, March 21, 1904; and the New York County Medical Association hereby waives notice of an application to court for an order consolidating said corporation pursuant to the terms of said agreement, and hereby consents to the entry of such an order without notice; and be it further

Resolved, That the secretary of this meeting be and he is hereby authorized and directed to send a copy of these resolutions, duly certified by the president and secretary of the meeting, to the secretary of the New York State Medical Association, and to execute and deliver any and all waivers of notice of an application for such order as the court may require.

KANSAS CITY ACADEMY OF MEDICINE.

Regular Meeting, held March 5, 1904.

The President, Dr. C. A. Ritter, in the Chair.

Bronchial Sapremia.

DR. ROBERT SLOAN read a paper on this subject with a minute clinical report of a case. The features of the case were as follows: Cause, neglected influenza; patient an adult, male, persisted at his work for one week when a severe exacerbation confined him to his bed. The temperature was erratic for four weeks, ranging from normal to 104 F. There were frequent and irregular sweats and chills. There was severe pain in the left side of the chest with much coughing, foul tongue and fetid breath. The perspiration was very offensive and there was great muscular weakness. There were no physical signs of pneumonia. At first the sputum was scanty, but later a very offensive reddish-colored sputum was raised by paroxysms of coughing at intervals varying from one-half to five hours. This sputum had the appearance of being pneumonic, but was not glutinous and did not possess any cellular elements nor fibrin. It was rich in saprophytes and very acrid so that spasm of the glottis occurred with each expulsion. Acute laryngitis and tracheitis ensued. The salmon-colored sputum was small in quantity and perfectly distinct from the ordinary grip sputum, which was coughed up continuously. It was apparently due to putrefaction of bronchial mucus. The violent spasm of the glottis was controlled by spraying the larynx with adrenalin chlorid solution. Within a few minutes after the first putrid sputum appeared the voice, which had previously been normal, became hoarse and sank to a stage whisper. This condition remained for three weeks and then gradually improved for three weeks more, when it had returned to normal.

The diagnosis was grip complicated, not by pneumonia, putrid bronchitis, nor bronchiectasis, but by bronchial sapremia. The cause was probably the inhalation of a small particle of decomposing food or of inspissated mucus from the nasopharynx during an effort to clear that passage by quick, forcible inspiration through the nasal passages. The inspired particle probably entered a small bronchial tube and set up a localized putrefactive process instead of producing an aspiration pneumonia such as would ordinarily be expected.

DISCUSSION.

DR. FRANK J. HALL, who did the microscopic work on this case, said that he found a leucocytosis of 18,000 just before the first putrid sputum was expelled. In the sputum there was an abundance of Pfeiffer's bacillus and a great number of saprophytic germs, some motile and others non-motile. Some were a chromogenic and the color was due to chromogens which they generated.

The paper was also discussed by Drs. Hal Foster, J. W. Kyger and C. Lester Hall.

MANILA MEDICAL SOCIETY.

Annual Meeting, held at the Government Biological Laboratory, Jan. 4, 1904.

Officers.

The following officers were elected for 1904: Dr. R. P. Strong, president; Dr. W. E. Musgrave, secretary-treasurer; and the council as follows: Drs. Paul C. Freer, John Maye, John R. McDill, Paul G. Woolley and E. C. Carter.

Papers.

The papers were read by Drs. J. R. McDill and W. B. Wherry on an infection of the hand, by Dr. R. P. Strong demonstrating certain human parasites, and by Dr. F. W. Dudley. The latter is president of the board of health for Pampanga Province, and gave a very interesting statistical study of the prevalent diseases, their modes of transmission and the practices of the native physicians and the customs of the people in regard to medical matters.

Annual Report of the Secretary.

The report of the secretary for the year ending Dec. 31, 1903, showed that on Jan. 1, 1903, the society consisted of 14 active members. During the year 18 active and 3 associate members were admitted; 1 was dropped, 1 resigned and 1 died. This left 29 active and associate members.

By requirement of the constitution and by-laws, and acting under the direction of the society and its council, the secretary commenced early in the year to secure the names, addresses and other data of importance regarding every legalized practitioner of medicine in the Philippine Islands. This has been found to be a very difficult task and has only been completed within the past month. The large amount of necessary printing, paper, postage and typewriting necessitated the expenditure of considerable money. This desired data had all been secured, had been catalogued by the card index system, and was on file with the records and papers of the society.

Some very interesting information had been secured by these inquiries, which, it was announced, would be made the subject of a special report to the society.

Monthly Meeting, held Feb. 1, 1904.

This meeting was a very enthusiastic and interesting one.

DR. PAUL C. FREER discussed the history of "Stereochemistry" from its discovery by Pasteur in the study of tartaric acid to the present time and applied its teachings to a theoretical explanation of immunity.

Surgery in the Philippines.

DR. J. M. BANISTER, after giving a most interesting statistical report of more than four hundred surgical operations performed by himself and assistants at the First Reserve Hospital during the past year, refuted the statements sometimes made in the medical press of the United States that bad results often follow operations performed in the Philippine Islands and that convalescence was unsatisfactory. He showed that clean technic gave as satisfactory results in Manila as in any other country.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held Feb. 10, 1904.

Dr. Samuel Wolfe in the Chair.

Mercury in Therapeutics.

DR. I. NEWTON SNIVELY read a paper on "The Unique Position and Value of Mercury in Therapeutics," in which he stated that in the frequency of its employment, it compared favorably with iron, but that here the similarity ended, the one being a builder up of tissue, while the other is a breaker down of tissue. He called attention to the fact that mercury had through all the ages occupied a prominent position in the materia medica, and reviewed the history of its use and the improvements in its administration in recent years. Without deciding on the relative cholagogic values of blue mass, calomel and corrosive sublimate, or their means of action, he stated that there was agreement among the profession on the main indications for the administration of calomel, when such symptoms are present as dull headache, yellow conjunctiva, constipation, sense of weight over the liver, no appetite and general lassitude, and whether the process takes place in one part or the other of the intestinal tract it is agreed that it acts on the small intestines and the upper part of the colon, hastening the contents downward, relieving hepatic engorgement, stimulating intestinal secretions and bile and producing large, watery stools. It is also of value in fractional doses in the early stages of typhoid fever and the diarrheal maladies of childhood. It passes through the stomach unchanged and thus does not interfere with the functions of this organ. Thorough trituration is of value and the joint administration of an alkali, preferably sodium bicarbonate, increases its effectiveness.

Therapeutics of Arsenic.

DR. HOWARD S. ANDERS read this paper and stated that the drug was an alterative, and while referring to the fact that the exact conditions produced by it were not known he called attention to the necessity of carefully watching for symptoms of arsenical poisoning when the treatment is long continued. The drug is an improver of nutrition and it would seem to be a direct stimulant to nutrition, by diminishing or checking the tissue change and indirectly it improves the nutrition by increasing the recuperative powers, and it would seem that some individuals need arsenic to create a normal neuromuscular vigor, just as the syphilitic needs the iodids and the chlorotic, iron. He referred to the fact that Gautier of Paris had discovered arsenic in the human body and also that M. Berhand of Paris had discovered it in hens' eggs, which would indicate the necessity for supplying it when absent. In regard to its employment in tuberculosis, he acknowledged a hesitancy in its use on account of the likelihood of deranging the mucosa. The natural arsenical waters of Levico are valuable in some cases of this disease.

He stated that his experience with the drug in the treatment of chorea extended to about twenty cases, in all but two of which the administration in the form of Fowler's solution in gradually ascending doses, in conjunction with dietetic, hygienic and psychic measures, was satisfactory. He remarked that in St. Vitus' dance, the drug seemed to be almost a specific, and believed it was best administered by beginning with about three drops and increasing about two or three drops each successive day. He referred to the work of Rope, Waxham and others, the latter of whom recommends the hypodermic use of the arsenite of soda, beginning with 1/10 grain doses and rapidly increasing to 1/2 or 2/3 grain doses. He considered the drug of great importance in the treatment of chronic malaria, anemias, cachexias, in the recurrent malarial fevers, and in intermittent malarial neuralgias. He had suffered from tertian malarial fever each spring and autumn until he took the drug, off and on for three months, continuing until the first symptoms of gastrointestinal irritability manifested themselves, since which time (fourteen years ago) he has not had any symptoms of the disease In certain cases of pernicious anemia and arthritis deformans, he believed that it had a beneficial effect. In scrofulous conditions, glandular enlargement and bronchial catarrhs, it is also of value.

Digitalis.

DR. WILLIAM EGBERT ROBERTSON reviewed the various pharmaceutic preparations and their actions and believed the preparation made from Allen's leaves to be the most valuable. In regard to digitoxin the chemistry is very incomplete; it seems to have some effect in relieving the blood pressure, but during its administration the volume of urine and pulse rate should be noted from time to time in order to avoid the possibility of cumulative action. He preferred the infusion, and stated that he had not secured nearly so good results by using the digitalin as by using the digitalis in two-dram doses every three hours. The drug is employed chiefly for its effect on the circulation and especially after loss of cardiac power; in cases of weakness without valvular disease, in simple dilatation, and in all forms of valvular heart disease, especially mitral disease, it is of value. In simple hypertrophy, aneurism and a high degree of arterial sclerosis, it is contraindicated.

DISCUSSION.

DR. HOBART A. HARE referred to the value of 1/200 grain doses of biniodid of mercury, in a watery solution every six to eight hours, for the purpose of aborting acute tonsillitis. He believed that all preparations of mercury were contraindicated in cases of tuberculosis, and believed that one of the chief reasons for the value of calomel in cases of intestinal disturbance was on account of its power of eliminating intestinal impurities. He believed arsenic to be of value in tuberculosis and anemia, as are also small doses of arsenate of copper in some cases of the latter disease, when iron does not seem to do so well. In regard to digitalis, he believed chemically and physiologically tested and carefully prepared fluid extract was the best, and recommended that the physician have it put up regularly in a known strength by certain reliable pharmacists. He felt that many cases of untoward results in the administration of digitalis were due to the fact that the physician was not thoroughly familiar with the strength. He

also referred to the danger of the cumulative effect of digitalis, caused by the non-absorption of the drug at the time of its administration, believing that when the required dose is ascertained the patient should be kept there, instead of increasing it. Absorption is also aided by the conjoint administration of mild doses of Hoffman's anodyne.

Dr. Ludwig Loeb referred to the value of calomel in conjunction with some active diuretic in the treatment of dropsical conditions. In the administration of mercury in tertiary syphilis and other diseases, it is very apt to produce mercurialism, which should be carefully watched for and the drug discontinued so soon as these symptoms appear. Arsenic, he remarked, was particularly effective in diseases of the glandular structures. It is also of value in skin diseases, such as psoriasis and lupus, and in anemia. Digitalis he did not view as a true diueretic, but rather as a heart tonic, acting by stimulation and thus increasing the circulation and secretion of urine.

Dr. Walter I. Pennock referred to the difference in strength of the various drugs put up by the different houses and urged the necessity for uniformity in this direction. He believed as good results were secured by fractional doses of calomel as by a single large dose. He stated that he had never seen a case of the cumulative action of digitalis, and believed the best results would be produced by use of the fluid extract, and after getting up to a sufficient dose by dropping back again to about half that amount, and again gradually increasing.

Dr. William L. Pepper stated that he had treated thirteen cases of diphtheria in one house with biniodid of mercury and that all recovered.

Dr. I. Newton Snively stated that he believed the value of any drug depended on the amount which was absorbed. In the administration of calomel, he recommended 1/10 of a grain every hour, combined with bicarbonate of soda and thoroughly triturated, and believed that the best results were secured with fractional doses.

Dr. Howard S. Anders believed arsenic to be of value in cases of tuberculosis when fever was absent, and urged the necessity of carefully prepared preparation of digitalis of uniform strength.

Dr. William Egbert Robertson stated that the effect of the fluid extract of digitalis on the stomach is less retained than is that of the ordinary preparations employed. He thought the infusion less reliable. He had previously stated that mercury may produce a nephritis. Now Kauffman and other German pathologists have called attention to the nephritic condition following the drug.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Urotropin in Scarlatina.

According to J. Widowitz, in *Interstate Med. Jour.*, the administration of urotropin prevents the occurrence of nephritis after scarlet fever. Proceeding on the hypothesis that scarlatinal nephritis is due to a bacterial lesion of the kidney, the author prescribes urotropin at the beginning of the attack for a few days, and then again during the third week, in doses varying from grain 1 (.06) to grains 7½ (.50) three times a day, according to the age of the child. This treatment was carried out in 102 cases, and nephritis did not occur in any of them.

Cystitis.

The following combinations are recommended by *Merck's Archives* in the treatment of cystitis:

R. Potassii citratis	3v	20
Potass. bicarb.	3v	20
Ext. hyoscyami flu.		
Spts. menth. pip., āā	3iss	6
Syr. limonis	3ii	60
Infusi lini (5 per cent.)	Oi	500

M. Sig.: One tablespoonful in a glass of water every hour until improvement is shown, then every two or three hours, according to the symptoms; or:

R. Olei santali	gtt. v	30
Olei terebinthinæ	gtt. ii	12
Olei cinnamomi	gtt. ss	03
Formini	gr. iiss	15

M. Ft. cap. No. i. Sig.: One such capsule every three to six hours; or:

R. Formini	3iiss	10
Potass. citratis	3v	20
Potass. bromidi	3iiss	10
Tinct. hyoscyami	3i	30
Ext. tritici flu.	3iss	45
Glycerini	3ss	15
Syr. rubi idali q. s. ad.	3viii	240

M. Sig.: A dessertspoonful in a glassful of water three times a day.

[Formin is hexamethylene-tetramine, and is identical with urotropin.]

Sea Voyages.

The advantages of the ocean climate, according to S. Solis-Cohen, in *Amer. Med.*, are its equability of temperature depending on the radiation and absorption of heat by the mass of water, the abundance of light, the freedom from dust and microbes and other impurities of the air, and the favorable atmospheric humidity. The prolonged rest and complete change of surroundings are important features in the curative effect of sea voyages.

The disadvantages are the monotony, the cost, the poor ventilation of the cabins, the danger of poor food and the possibility of seasickness. A sailing vessel, according to the author, is preferable to a steamship. After such depressing affections as influenza, short sea voyages are of value in giving mental and physical rest. In cases of neurasthenia longer voyages of one or two months are useful, also sometimes in asthma, in scrofulous conditions and frequently in incipient tuberculosis, prolonged voyages, in which port is not touched, are recommended only where there is high resistive power or in cases of drug habitués. Patients with severe cardiac disease should not take ocean trips at all. In cases of advanced tuberculosis, chronic gastro-intestinal disorders, cholelithiasis, ocean trips of more than one week's duration should not be taken. Neuralgic and gouty patients are frequently worse on the ocean than at home.

SEASICKNESS.

In the treatment of seasickness the author recommends as a preventive that all work be abolished for twenty-four hours before embarking, so that the system may not be exhausted, and as hearty a meal as possible be eaten before going on board. A calomel purge followed by a saline should be taken one week before sailing, and repeated two days before sailing. Saline laxatives or enemas should be used daily for the first few days on board ship. Light, easily digested food should be taken at frequent intervals. Strychnin, atropin or preferably picrotoxin should be given in small and frequent doses for a few days before sailing, and continued until the "sea legs" are gained.

In his opinion suprarenalin in doses of grain 1/24 (.0025) to grain 1/12 (.005) dropped on the tongue, is of value in some cases. After seasickness has set in, small amounts of light foods, such as soups, junket, beef juice and peptone should be taken at short intervals. Effervescent drinks, such as champagne and seltzer, are frequently of service, as well as counter-irritation over the epigastrium. He recommends, in some cases, the Winternitz combination compress, which consists of a cool compress enclosing a warm epigastric coil as of value in this form of vomiting. In addition to the laxative treatment, the bromids, chloral and other hypnotics are valuable. The author prefers the bromids and occasionally morphin. The vaso-

motor stimulants, such as cocain, strychnin and atropin, may also be of service.

Agalactia.

The following combination in *Med. Record*, is recommended in the treatment of agalactia:

℞ Strych. sulph.
Pilocarpinæ hydrochlor., āā ..... gr. i | 06
Sacch. lactis ..... ℥iiss | 10

M. Ft. cap. No. 60. Sig.: One every four hours.

Epilepsy.

The following combination is recommended by W. Alessi in the treatment of epilepsy:

℞ Sodii arsenatis ..... gr. 1/60 | 001
Zinci phosphidi ..... gr. 1/12 | 005
Calcii phosphatis ..... gr. iss | 09
Sodii benzoatis
Pancreatin, āā ..... gr. iii | 20

M. Ft. cap. No. i. Sig.: One such capsule after each meal.

The arsenic and zinc are nerve tonics. The calcium phosphate reduces cerebral excitability. The pancreatin and sodium benzoate aid digestion and overcome intestinal fermentation.

Chronic Bronchitis.

In the treatment of the dry catarrhal form of chronic bronchitis, T. A. Claytor, in *Wash. Med. Annals*, recommends the following combination to control the cough:

℞ Pulv. ipecac. et opii ..... gr. iii | 20
Pulv. capsici ..... gr. ss | 03

M. Ft. cap. No. i. Sig.: One capsule every three hours.

For the relief of dyspnea, difficult cough and tenacious expectoration a combination similar to the following is recommended:

℞ Potass. iodidi
Potass. bicarb., āā ..... ℥iss | 6
Ammon. chloridi ..... gr. xlv | 3
Ext. glycyrrhizæ flu. q. s. ad ..... ℥ii | 60

M. Sig.: One teaspoonful four times a day in water.

For the morning cough, when the patient complains of much difficulty in raising the phlegm which has accumulated, the following is recommended by the author:

℞ Sodii bicarb. ..... gr. xv | 1
Sodii chloridi ..... gr. v | 30
Spts. chloroformi ..... gtt. x | 65
Aquæ anisati q. s. ad ..... ℥ss | 15

M. Sig.: To be taken at one dose in warm water, on waking.

Tar is also recommended as a very efficient remedy, taken in the form of a pill, each grains two (.12), every two or three hours, or as the syrupus picis liq., two teaspoonfuls in water every three or four hours, or combined as follows:

℞ Syr. picis liq. ..... ℥ii | 60
Syr. pruni virg. ..... ℥i | 30

M. Sig.: A dessertspoonful to a tablespoonful every three or four hours.

The foregoing, in the opinion of the author, is the ideal combination as a cough mixture in chronic bronchitis.

In the treatment of bronchorrhea creosote, oil of eucalyptus and terebene are the best preparations. The author prefers eucalyptus given as follows:

℞ Olei eucalyptus
Olei amygdalæ dulcis, āā ..... gtt. v | 30

M. Sig.: Drop the entire amount into a capsule and take one such capsule every three hours, followed by a full glass of water.

Terebene may be taken in doses of ten minims each (.65) dropped on a lump of sugar or placed in a capsule.

In the dry catarrh Yeo recommends the following:

℞ Sodii bicarb. ..... ℥i | 4
Sodii chloridi
Ammon. carb., āā ..... ℥ss | 2
Spts. chloroformi ..... ℥ii | 8
Aquæ q. s. ad ..... ℥vi | 180

M. Ft. mistura. Sig.: Two tablespoonfuls with the same amount of hot water every four to six hours.

Along with this combination the author recommends the following:

℞ Antimonii tartarati ..... gr. 1/6 | 01
Morph. acetatis ..... gr. 1/6 | 008
Ext. hyoscyami ..... gr. ii | 12

M. Ft. pil. No. i. Sig.: One such pill at bedtime; or:

℞ Pulv. ipecac. ..... gr. 1/8 | 008
Codeinæ ..... gr. ss | 03
Ext. hyoscyami ..... gr. ii | 12

M. Ft. pil. No. i. Sig.: To be taken at bedtime to allay the irritative, hyperesthetic condition of the bronchial surface.

In cases of bronchorrhea copaiba is recommended, combined with tar, in capsule form or according to the following formula:

℞ Copaibæ ..... ℥ii | 8
Mucil. acaciæ ..... ℥vi | 24
Spts. chloroformi ..... ℥ss | 2
Aq. camphoræ q. s. ad ..... ℥vi | 180

M. Ft. mistura. Sig.: Two tablespoonfuls three times a day.

Turpentine is a more agreeable preparation, and is very efficacious prescribed in capsules or given in the form of an emulsion as follows:

℞ Olei terebinthinæ ..... ℥i | 4
Mucil. acaciæ ..... ℥ii | 60
Misturæ amygdalæ q. s. ad ..... ℥vi | 180

M. Ft. emulsio. Sig.: One or two tablespoonfuls three or four times a day; or it may be given in the form of an inhalation, placing a teaspoonful of turpentine in a pint of hot water, and directing the patient to inhale the vapor.

Analgesic for Rheumatism.

The following combination is recommended as a local analgesic in the treatment of rheumatism:

℞ Menthol ..... ℥i | 4
Betulol
Ceræ albæ
Lanolini, āā ..... ℥i | 30

M. Ft. unguentum. Sig.: Apply with friction if possible. If the joint is too tender apply on lint.

[Betulol is methyl-oleo-salicylate compound.]

Medicolegal.

Confining Smallpox Patient in Unsanitary Pest-House.—The Court of Appeals of Kentucky says that it was alleged in the case of Having vs. the City of Covington by the party suing for damages that he was taken against his will when sick with smallpox and confined in a pest-house, which was unfit for any one, well or sick, to remain in; that the roof was broken, and the sides of the house open, so that the rain, snow, and ice could come in and on him; that he was placed in a filthy, unhealthy, and damp room, and compelled to remain there; that the bed, bedding, and covering and place where he was kept were unfit for any one to occupy; that, because of the cold, sleet and snow, and other elements, and the filthy condition of the rooms and bedclothing, he suffered both mental and physical pain and anguish, and that the ravages of the disease with which he was afflicted were increased by reason thereof. The court says that it was agreed that the officials who committed the wrongs complained of were personally liable for the injuries received, and the only question to be determined was, could the city be made liable therefor? One of the general principles underlying the administration of government of municipal corporations is that, in the preservation of the peace, public health, maintenance of good order, and the enforcement of the laws for the safety of the public, they possess governmental functions, and represent the state, and under that principle a city is not liable for the malfeasance, misfeasance, or nonfeasance of its officers. With reference to the matters alleged, the city, by its officials, was acting for the preservation of the public health, and in a governmental capacity, and as an arm of the state government. All the authorities support this conclusion, and there is no deviation from these principles, except where the city is made liable by an express statute. There being no statute making the city liable in this case, a judgment, on demurrer, in its favor is affirmed.

Question of Skill for the Jury—Quoting from Books.—The Supreme Court of California says that, in the malpractice case of Bailey vs. Kreutzmann, the physician sued examined Mrs. Bailey and pronounced her ailment to be a cystic tumor of the ovary, and ordered her to a hospital, where he proceeded to operate on her for the said ailment. After an abdominal incision and careful inspection of the parts, he discovered that the ovaries were in reasonably good condition, and, finding the uterus enlarged, concluded that the patient was probably pregnant, and sewed up the incision. The wound healed, and subsequent events proved that she was not pregnant at the time of the attempted operation. Thereafter the physicians and surgeons called as witnesses reached the conclusion, from the history of the case and all the circumstances surrounding it, that the patient's trouble was neither pregnancy nor an ovarian tumor, but was in fact a fibroid tumor of the uterus, or something else nearly allied thereto. The patient and her husband brought this suit to recover $40,000 for the alleged unskillful and negligent acts of the physician. The verdict and judgment were in the physician's favor; but the Supreme Court has reversed an order denying a motion for a new trial on account of certain errors. At the request of the physician, the jury was instructed: "The defendant in this action is not charged by the plaintiffs with any lack of general skill or competency as a physician and surgeon. This amounts to an admission, and you are bound to hold, accordingly, that the defendant was possessed of that ordinary medical and surgical knowledge and skill which the law requires him to possess; there being no degree other than that of ordinary knowledge and skill recognized by law as a standard or applicable as a measure of knowledge and skill in such cases." The Supreme Court holds that this instruction was erroneous, and should not have been given. The plaintiff charged the defendant with negligence and want of skill in treating her, and should have been left to argue to the jury that the facts presented showed that the defendant was lacking in the skill usually possessed by a physician and surgeon. Again, the court says that it has been held, without conflict and in an extended line of cases in California, that medical works are hearsay and inadmissible in evidence, except, perhaps, on cross-examination, when a specific work may be referred to, it seems, to discredit a witness who has based his testimony on it; and it must be taken as the settled rule in the state that medical books are not admissible as evidence, except in the instance specified. If the books themselves are hearsay and inadmissible, certainly any recital of their contents or the substance thereof is none the less hearsay, and should be excluded for that reason.

Physical Examination of Eyes Requiring Use of Drugs.—The case of A., T. and S. F. Ry. Co. vs. Palmore, as it is entitled in the Supreme Court of Kansas, was brought by the latter party to recover damages for injuries to his eyes alleged to have been sustained while in the company's employ handling creosote treated ties. Before the trial began the company made a request for an expert physical examination of his eyes in the usual and ordinary manner. No objection was made to the time or form or propriety of the request. On behalf of the party it was stated that he consented that the experts might examine his eyes by inspecting them, but that he protested against the court permitting experts or anybody else to put drugs into his eyes for the purpose of dilating them. No reason whatever for this protest was vouchsafed. On the part of the company it was suggested that in no instance could a proper examination of the eye be made without dilating certain of its parts, and the request was made that this feature of the examination be left to the experts themselves. Thereupon, the trial court made the following order: "The plaintiff, by his consent, may subject himself to have his eyes examined, but the court will not permit any drugs to be used in the examination without the consent of the plaintiff." The Supreme Court holds that this was error. It says that it is a matter of common knowledge that, through the restriction of the energies of trained students and investigators to that single field, ophthalmology has been brought to a state of comparative perfection. Here, as in all other quests for truth conducted under the guidance of the scientific method, the first requirement is a full and accurate observation of the facts. The modern scientific expert will be content with nothing short of a view of the facts where they can be seen. Therefore he has invented the ophthalmoscope for the exploration of the interior of the eye, the rhinoscope for the exploration of the nasal cavities, and other appropriate instruments for the exploration of other hollow organs of the body, and he will not attempt to bridge the chasm between ignorance and knowledge in any case where they may be of assistance until he has availed himself of their use. The question, therefore, arises whether or not the law, as a means of justice, will tolerate any other than the surest method of ascertaining truth; whether or not, with all the marvels of scientific achievement placed at its command, the rule of thumb shall be sufficient for its purposes; and whether or not in this case the timely application of the company for the production of the best evidence should be granted before a transfer from its treasury to the party suing of $5,000 was ordered. Again, it says that drugs are of infinite shades of potency from the rankest poisonousness to absolute innocuousness. They may produce death, or an effect so fleeting and temporary that only the most skilled observer can be conscious of it; and reactions from them range from the utterly intolerable to the positively pleasurable. The question, therefore, was not if drugs should be used, but if an examination should be made without serious inconvenience and without deleterious effect. Any enforced examination is vexatious and embarrassing, and very frequently must involve some slight degree of that discomfort which is denominated pain; but an examination may nevertheless be made with due consideration of both the sensibilities of the party suing and the demands of justice. From all this, including an examination of a number of authorities more or less in point, the Supreme Court says that the conclusion must follow that the District Court should have required an expert examination of the plaintiff's eyes to be made, subject to the limitation that it should not produce serious discomfort or any deleterious consequence; and, in order to insure the execution of its order according to the strict letter of its terms, the court should have approved, if it did not actually select, the experts appointed to make the examination. Or, as it sums it up, in an action for damages for a negligent injury to the eyes, claimed to be permanent, a timely request for an expert physical examination of the injured organs in the usual and ordinary manner should be granted, although involving the use of drugs for dilating the pupils of the eyes, subject, however, to the limitation that the examination does not produce serious discomfort or any deleterious consequence.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.
March 31.

1 *The Modern Pharmacology of Iron. Reynold Webb Wilcox.
2 *Alopecia Areata. Frederick H. Dillingham.
3 The Etiology and Pathology of Arteriosclerosis. H. B. Anderson.
4 *The Diagnosis of Metapneumonia Empyema in Infancy and Early Childhood. John Lovett Morse.
5 *Pure Olive Oil and Its Use in the Treatment of Chronic Dysentery and Allied Conditions. Henry H. Rutherford.
6 *The Mind as a Causative and Therapeutic Factor in Medicine. Bittle C. Keister.
7 A Comparative Study of Animal Blood. Edward T. Williams.
8 The Scientific Basis of Mind Cure. Selwyn A. Russell.

1. **Iron in Therapeutics.**—Wilcox discusses the pharmacology of iron, and remarks that the term "organic" iron should be considered obsolete and the term "masked" substituted. The hemoglobin can not be taken into account as it is destroyed so soon as it enters the stomach, therefore blood products for administration are useless. Undoubtedly many so-called organic iron compounds are practically only combinations of iron salts with albuminoids. This is shown by the addition of a few drops of silver nitrate solution which causes albuminoid precipitation. In true masked iron the addition of hema-

toxylin solution causes no color reaction. In determining the form of masked or organic iron for oral administration he says that one should be selected which 1, should be of definite chemic composition; 2, does not precipitate with a silver nitrate solution; 3, does not give the blue-black color with MacCallum's test; 4, is not decomposed by the hydrochloric acid of the gastric juice; and 5, it must show definite results in an increase in the number of red blood-corpuscles and in the amount of contained hemoglobin. These requirements are evidently the most rigorous which can be devised, and in meeting them modern iron therapy will be placed on a secure foundation.

2. **Alopecia Areata.**—This disease is considered by Dillingham as parasitic in nearly all cases, and should be treated as such, as is the case in France. The best results can usually be obtained from chrysarobin which can be painted on after dissolving in liquid gutta-percha or used in vaselin, which latter plan gives the best results. The strength of the ointment varies from 20 gr. to 2 drams to the ounce, and depends on the age of the patient and the susceptibility of the skin. Care should be taken in keeping it out of the eyes and not using it on too large a surface at a time. He also advises the use of stimulating lotions to cause an increased blood supply to the part.

4. **Metapneumonic Empyema.**—Morse describes the onset and symptoms of empyema occurring after pneumonia, especially in early age, and gives his conclusions as follows:

Metapneumonic empyema usually develops during the last days of the pneumonia or during the first days after the crisis, but in rare instances may develop in the early days of the pneumonia or later during the convalescence. Persistence of the fever and other symptoms after the time of the expected crisis or their recurrence after the crisis should always suggest the possibility of an empyema. There is nothing characteristic about the symptoms of empyema, which are those common to all severe pulmonary affections. Rapid emaciation and progressive pallor are the most constant symptoms in neglected cases, while chills and sweating are unusual. Enlargement of the affected side as a whole is more common than flattening or bulging of the intercostal spaces. Flatness in Traube's space is less constant in left-sided effusions in infants and children than in adults. The most constant and characteristic sign of effusion is a marked sense of resistance on the affected side. Displacement of the heart almost always occurs, and next to the sense of resistance is the most important sign. These two signs justify the diagnosis of effusion even if all the other physical signs are inconsistent. Dullness or flatness is almost always present, but may be replaced by tympany. The respiratory sound is almost invariably bronchial or bronchovesicular in character, and, as a rule, diminished in intensity. Loud, bronchial respiration is, however, not uncommon, even with large effusions, and counts very little, if at all, against the presence of fluid. The vocal resonance is very variable, both in character and in intensity and is of little value in diagnosis. It is very difficult to determine the vocal fremitus satisfactorily. Its absence is, however, an important diagnostic sign. Rales may be transmitted through large amounts of fluid. Their presence does not rule out an effusion.

5. **Olive Oil in Dysentery.**—A special treatment is here proposed by Rutherford for cases of chronic dysentery, sprue, and chronic enterocolitis of tropical origin. A number of patients were selected for the treatment and the results were such that he considers the oil decidedly curative. It increases the flow of watery bile which favors the absorption of fats in the intestines and stimulates intestinal peristalsis, acts as an intestinal antiseptic and destroys certain pathogenic bacteria. The results of the administration are positive evidence of the increased quantity of bile; decrease in the number of daily bowel movements and improvement in their character; gradual cessation of signs of fermentation and putrefaction along the gastro-intestinal tract and resulting subsidence of pain and tenderness, with a general improvement, increase of appetite, improved digestion, improvement of the nervous system and rapid gain in weight and strength. There was an apparent positive cure in an average time of two months and upward with a few recurrences to date. The usual way of giving it was to begin in the first period of treatment, with 30 c.c. of the oil three times per day for the first three days, then increased to 60 c.c. three times daily, and on the sixth day, is again increased to this quantity four times in the twenty-four hours. During the first half of this period the patient is given only a milk diet; in the latter half there is added to it one to three ounces of scraped beef or its equivalent in egg albumin daily. By this time the patient becomes tolerant of the oil. He may lose in weight temporarily. In the second period of the treatment the oil may be given in greater quantity, not less than 90 c.c. three times daily, without discomfort, and kept up for perhaps two months or more in chronic cases until the patient's recovery has been fully established and the normal weight restored. In the third, or getting-up period, the patient is gradually restored to a full diet and the oil decreased. In most cases in the beginning it is necessary to give with it about equal quantities of hot milk until the patient gains a tolerance. Later on, a relish for the oil is obtained. It is given about an hour before meals, so as to get the maximum effect on the empty stomach and intestines. The oil must be the pure olive oil. In a special report to the commanding officer by Dr. G. Parker Dillon the results are given mainly as stated, but he does not feel sure that relapses will not occur, but the oil treatment is guardedly approved.

6.—This article under a different title appeared elsewhere. See THE JOURNAL, xli, title 37, p. 1559.

Boston Medical and Surgical Journal.

February 25.

9 *The General Management of Diabetes. Frederick C. Shattuck.
10 *Medical Treatment of Diabetes. W. H. Thompson.
11 *A Comparison Between the Medical Uses of the X-rays and the Rays from the Salts of Radium. Francis H. Williams.
12 *The Prognosis of Idiopathic Pleurisy. George G. Sears.

9 and 10.—See abstract in THE JOURNAL of February 6, p. 391.

11. **X-Rays and Radium.**—Williams finds that the rays from radium salts, unlike the *x*-rays, are not useful in diagnosis either by radiographs or fluoroscopic examination. The beta rays from radium salts will heal some cases of new growth that are not cured by the *x*-rays, and act more promptly, though over a more limited surface than the *x*-rays. Radium salts at an activity of 5,000 or considerably more, are not strong enough to be efficient. Pure radium salts which have a radioactivity of about 1,500,000 are not too strong for the work to be done. Radium rays, unlike the *x*-rays, are uniform, and great care should be exercised to avoid burns.

12. **Idiopathic Pleurisy.**—Sears has investigated a number of cases of idiopathic pleurisy for the purpose of estimating their relation with tuberculosis. The tables show that a considerable proportion at least becomes tuberculous. He thinks that the results do not support Cabot's hopeful view, but rather raise the suspicion that an attack of pleurisy may be a manifestation of a suspected taint causing death at a later period. How great the damage is he does not say, but the conclusions which he considers justified are to the effect: 1. That about 10 per cent. of his 439 cases plus Cabot's 300 are known to have developed tuberculosis. 2. That over 55 per cent. of all cases which were followed to their death had died from some form of tuberculosis. 3. That tuberculosis, when it occurred, developed within five years in over 50 per cent. and within ten years in over 70 per cent. 4. That this danger is much increased by a tubercular family history or a personal history of some form of tuberculosis previous to the attack.

Medical Record, New York.

March 12.

13 *Secondary Laparotomy. H. C. Coe.
14 Dry Superheated Air in Therapeutics. Clarence E. Skinner.
15 *Strangulated Hernia. John F. Erdmann.
16 *Some Points Regarding the Early Diagnosis and Some New Features in the Treatment of Pulmonary Tuberculosis. W. Freudenthal.
17 The Relation of Physical Defects to Mental Development. George Stockton.
18 Mastoiditis. E. H. Pomeroy.
19 Remarks on the Preparation of Vaccine Virus. John F. Anderson.

13. **Secondary Laparotomy.**—By secondary laparotomy, of course, is understood an operation undertaken months or years after a previous section for the relief of the symptoms that were either not relieved or have developed subsequently. Among these symptoms are adhesions which are not always well accounted for, and it would be interesting to know how far gauze drainage is responsible. It is difficult to explain how in many cases where large raw surfaces are left and also infected stumps, adhesions either do not form or give rise to very little trouble. Fistulæ are annoying complications and

while they generally heal, now and then a secondary operation is required. Secondary pus foci may be evidences of imperfect work. Hernia, Coe does not here consider. The development of neoplasms of the uterine adnexa and the broad ligaments after previous operation are too common to require comment. His personal experience has led him to remove the opposite ovary, even though macroscopically healthy, when its fellow is the seat of papilloma, since he finds that the remaining organ is usually affected later. He generally tries to preserve the functions when he can, but finds that sometimes the most promising cases are the most disappointing in this respect. Conservative operations on the ovaries are often followed by troublesome complications. He asks whether in doubtful cases it would not be wiser to leave an ovary alone if we do not feel justified in removing it. His experience at Bellevue has made him dubious as to the complete elimination of fresh gonorrheal or septic infection by preliminary curettement, or catheterization and irrigation of infected tubes. The frequency with which a diseased appendix is found after laparotomy is a strong argument in favor of its general removal. The principal indication for secondary operation, however, is pain, and hemorrhage may often require it. He remarks in regard to the diagnosis, and says that the prognosis should be a guarded one as to complete relief, though in operating in certain obvious conditions—neoplasms, persistent hemorrhage, etc.—we may confidently expect positive results. When it comes to the question of separating dense adhesions or dissecting out exudates, we should not forget that they may recur in spite of everything. There is generally relief, however, and it is sometimes permanent. The cure of fistula is often difficult and prolonged, and even then recovery may be doubtful. While he has confined his remarks on secondary operations to abdominal section, he admits that for the simple removal of the uterus and the remains of the adnexa he would prefer the vaginal route, but he can not admit that adhesions above the pelvic brim can be thus treated. A surgeon can hardly be too radical at his second seance and he usually has the full cooperation of his patient on this occasion. The man who discovers a sure method of preventing the re-formation of adhesions will deserve the lasting gratitude of the world.

15. **Strangulated Hernia.**—Erdmann analyzes 58 cases occurring in a practice of about eight years: 31 being inguinal hernias, all males, of whom 26 recovered. The details of the five deaths are given. Strangulation in every one of these cases was at the external abdominal ring. There were 19 cases of femoral hernia; 4 in males and 15 in females. There were 3 cases of excision of the intestine, 2 recovering; 6 cases of umbilical hernia, all females, and 1 death. He would use general anesthesia in these cases if the patient has not been vomiting, but in case of vomiting, local or spinal anesthesia should be employed. He prefers, however, local anesthesia in all instances as being less likely to cause vomiting and inspiration pneumonia and lessening shock. There is no reason for not allowing the hernial gut to remain in the wound for a number of hours if there is a question as to its viability. If time shows that it is non-viable, a secondary operation with excision and radical cure can be proceeded with. He also returns the omentum when not gangrenous unless it is matted together by adhesions or hypertrophied. In excising the omentum he never uses the looked or chain ligature because it puckers up the mass. He prefers to take up small sections and make individual ligations, keeping the omentum in its spreading relationship to the intestine. The youngest case was a male thirteen days old; no anesthesia; recovery. The oldest was a female aged 86; femoral hernia; local anesthesia; recovery. The majority of the cases seem to occur during the warm weather when general relaxation is greatest. He does not believe in taxis. The after-treatment is simple. A little rise of temperature, ½ to 1½ degrees, is nothing to be feared, but the dressings should be taken down occasionally so that the wound can receive proper attention. A movement of the bowels is sought for in all non-excision cases the second day, and a light diet given until the temperature is normal. In excision cases enemas are used for the first week and rectal alimentation from four to six days; food by the mouth after the sixth, and a light diet after the tenth. The complications of inspiration pneumonias and solitary follicle ulceration are briefly mentioned. In uncomplicated cases he allows the patient the head and back rest after the fourth day and to be out of bed on the thirteenth or fourteenth in inguinal and femoral hernia. In abdominal hernia they are out of bed in three weeks with a snug binder.

16. **Tuberculosis.**—Freudenthal calls attention to laryngeal and pharyngeal disorders in the diagnosis of early tuberculosis, pointing out the characteristic appearances, anemia of the soft palate with a congestive condition of the uvula and fauces, which is an early symptom, and congestion of the larynx with pallor of the epiglottis. The use of the old Koch tuberculin is considered by him comparatively safe. He has had only a limited experience, however, in 31 cases, and can not record any unpleasant results. The individual dose ranges from .5 to 2 mg., increased if there is no reaction to 3 or 5 mg. and even more. He thinks it should be tried on a larger scale. He speaks well of electric light as a therapeutic agent in tuberculosis, and also of carbonic acid gas, though its use seems to have been forgotten. In summing up his experience, which will be published more fully later, he says that the addition of CO_2 to treatment with the so-called blue rays of light has given encouraging results and promises more for the future.

New York Medical Journal.

March 31.

20 *A Simple Method of Intestinal Anastomosis. H. M. Hepperlen.
21 Tertiary Syphilis of the Nose and Pharynx. (Continued.) W. Scott Renner.
22 *Senile Pneumonia; Value of Persistence in Treatment; Correct Method of Using Oxygen. Solomon Solis-Cohen.
23 *A Study of the Affection, "Writer's Cramp." Gustaf Norstrom.
24 *Rectocolonic Lavage, with Description of New and Improved Tubes. Dwight Henderson Murray.
25 *The New Biologic Test for Human Blood, with a Report of its Employment in a Recent Murder Case. (Concluded.) A. Robin.

20. **Intestinal Anastomosis.**—Hepperlen uses a gelatin capsule for the bobbin or cylinder over which to suture the intestine. It serves as a firm support and is readily absorbed after the operation. He has them made of various sizes, having them slightly formalinized so that they will retain their shape at least fifteen minutes anywhere within the alimentary canal, and then completely dissolve. He describes his technic as follows:

When the capsule is placed in position I insert a few interrupted sutures through all the coats of the bowel to hold the parts in coaptation. I then complete the work by using a suture that I have never yet seen recommended. I use a fine intestinal silk, twenty-four inches long, doubled, with a needle on each end, having the knot where the ends of the silk are tied in the center. I start my first suture under the mesentery attachment, inserting a needle with each hand at the same time through the two outside coats of the bowel, an eighth of an inch from the cut margins; pick up a loop about one-twelfth of an inch in length, according to the method of Lambord, draw the parts together and tie them at each stitch. Continuing thus until I have completely encircled the bowel, I close the mesentery opening with the same suture, being careful to pass my needles under the small vessels in the peritoneal coat so as not to constrict the blood supply more than necessary.

The figures appended to the text illustrate the method. The advantages he claims are first, its simplicity; second, it can be introduced, practically without handling the parts, in about a quarter to an eighth of the time required for any other stitch, and third, when the bowels are sewed together by this method they are held more firmly than by any other stitch he knows of. In fact, in using experimentally much pressure where this method has been employed, he has had the intestine give way at other parts than at the point of suture. By the aid of the capsule and suture recommended, end-to-end anastomosis can be performed in five to ten minutes.

22. **Senile Pneumonia.**—In this clinical lecture Solis-Cohen calls attention to the treatment of pneumonia in elderly persons, and the various drugs to be used. Alcohol is given in the form of champagne, which he thinks is better as causing less stomach irritation, and it is more readily accepted when alcoholic stimulation is required. A saline infusion under the skin was given, which is a useful practice when the injection is done slowly and does not exceed eight to twelve ounces at a time. Hot flaxseed poultices were kept about the thorax

during the day and at night were replaced by a lamb's wool jacket for the better part of a week. In using poultices it is important that they should be well made and retain their heat for at least four hours so as not to disturb the patient too frequently. It is not wise to awake the patient either for food, medicine or any applications. At one time in the treatment oxygen was given by inhalation. It is a useful remedy but is usually put off too long. He describes his method of giving it, using the purified gas under compression in a cylinder to which a wash bottle and inhaling terminal are attached. He gives the oxygen very quietly for a considerable period of time; in severe cases from one hour to six or twelve, or even more, removing it only when needed to give the patient rest or sleep or food. After two or three hours of continuous administration of oxygen there will usually be sufficient improvement to warrant its intermittence for a couple of hours. Half an hour's use of oxygen in every two or three hours may suffice. The administration should be entrusted to skilled hands and the dosage regulated according to circumstances. He remarks as regards temperature that a high temperature is a favorable symptom; a low temperature, as a rule, is bad. Hence this indicates the danger of antipyrin medication. Many patients, he thinks, suffer from heart failure owing to the use of the coal-tar antipyretics either for the pneumonia or because previously employed.

23. "Writer's Cramp."—Norstrom describes "writer's cramp," holding that it is not necessarily a nervous affection, and pointing out that in many cases at least it is myositic and with a tendency to hardened nodules in the muscles, often multiple. The massage applications to be used are effleurage and proper friction. He thinks that in many cases in the future a careful examination will reveal the presence of peripheral changes of the type described. Not all the cases perhaps are due to chronic myositis or all curable by massage. There are some cases where no deposits are found, but these are exceptional. He mentions several of this type. Massage can not be effective when nothing tangible can be detected in the muscles, but in the majority, the condition, he holds, is due to myositis with localized lesions.

24. Rectocolonic Lavage.—Murray describes the rectal tubes which he has devised and which he thinks meet the indications better than any others. The tubes are solid and rounded at the head with a double perforation allowing inlet and outlet; are very soft and pliable; the distal outlet and inlet made on a curve. Being made of soft rubber they can not break and can be used with water of a higher temperature than can be done with metal or hard rubber. The paper is illustrated, which makes the descriptions very intelligible.

25. Biologic Test for the Blood.—In this continuation of his paper Robin describes the tests as made in a special medico-legal case, and also gives his conclusions as follows:

1. Human blood can be distinguished from that of other animals, except, perhaps, monkeys, by means of antiserum.
2. Antiserum may be obtained by immunizing rabbits against human blood.
3. For immunization, it is most convenient to employ the blood obtained from human placenta, which can be secured aseptically without much difficulty.
4. From six to eight injections, 8-10 c.c. each, should be made at intervals of three to five days, and the serum secured at least a week after the last injection.
5. At the end of the immunization period it is well to test the potency of the antiserum by securing a small quantity of blood from the ear vein or any of the deep-seated vessels.
6. To obtain the serum from rabbits for testing purposes, it is not necessary to sacrifice the animal as sufficient serum can be secured from any of the large veins or arteries, the femoral being the most accessible.
7. Care should be taken to have all solutions perfectly clear and the blood sufficiently dilute. The antiserum should be used pure.
8. Control tests on blood from different domestic animals should invariably be made.
9. With all the precautions observed, a distinct clouding within thirty minutes and a precipitate within two hours is certain evidence that the blood is human.
10. In medicolegal cases the tests should be repeated at least twice, so as to exclude any possible error.

Medical News, New York.

March 12.

38 *A Clinical Study of 62 Cases of Intestinal Infection by the Bacillus Dysenteriæ (Shiga) in Infants. Llaneus E. La Fetra and John Howland.

27. *Factor in the Etiology of Distorted Nasal Septa. Charles E. Quimby.
28. *The Abortive Treatment of Gonorrhœa in the Male. Frederic Bierhoff.
29 Differential Diagnosis and Treatment of Chancroid and Chancre. C. G. Clark.
30 *The Ocular Signs of Syphilis. Wendell Reber.
31 *Diagnosis and Treatment of Syphilis of the Central Nervous System. Luther C. Peter.
32 The Recognition and Treatment of Some of the Pharyngeal Lesions of Syphilis. Lewis S. Somers.
33 *New Stain for Diphtheria Bacilli. Eduardo Andrade.

26. The Shiga Bacillus in Infants.—The material used by La Fetra and Howland was obtained during the months of July, August and September. Sixty-four cases were examined consecutively and 62 gave a positive reaction. From an analysis of the cases they give the following facts as specially worthy of notice:

1. The unexpectedly great prevalence of the dysentery organism in cases of diarrhœa in infants, at least during the summer months. Thus, out of 64 consecutive cases examined in the Vanderbilt clinic, 62 were positive. As has been mentioned before, this is the first large series of cases examined seriatim that has been made and the result is certainly striking. It is all the more so when we consider that these were cases in dispensary practice, where with the severe the very mildest cases may be seen. Duval and Bassett examined 25 successive cases and found the organism in 10, but it should be stated that the patients were observed in a sanatorium at a distance from Baltimore where, of course, only the more severe cases were sent from the dispensaries, while ours were all ambulant patients and their stools were examined wherever there was the slightest sign of any digestive disturbance. Our cases were also seen very early whereas, in hospitals, the cases are rarely seen until their initial symptoms have passed.

2. All types of diarrheal disease, as characterised by their clinical symptoms, are to be found among these cases. Some were examples of severe and some of mild ileocolitis; others could only be classed as the mildest form of intestinal indigestion. The course of the disease, while usually short, was prolonged in eight cases.

3. As compared with cases of "summer diarrhœa" of other years those in this series were in general much milder; and possibly this was due to two factors: the cool summer and the increasing knowledge among the tenement population of the care of infants and their food.

4. The striking number of breast-fed infants, 14 in 62 cases, more than 20 per cent. of all.

In the series of Duval and Bassett previously mentioned, there were 4 breast-fed cases and a few others in addition have been reported. The great number in our series is accounted for by the fact that all stools from patients with diarrhœa were examined. As will be remembered of our 14 breast-fed children, not one was severely or even moderately ill, and only one had blood in the stools. Such cases would therefore not be sent to hospitals, and so usually their stools would not be available for examination.

5. The serum treatment was not given in a sufficient number of cases to warrant any conclusions. While of apparent benefit in some cases, there were others in which no effect whatever was noticed. It may be that larger dosage is necessary; but, if so, the serum must be more concentrated than at present.

27. Septal Distortion.—Quimby's theory of septal distortion is that it is due to defective development of the jaws and teeth. Children with irregular teeth, high palatine, or narrow alveolar arch and distorted nasal septum should be treated by the dentist and rhinologist together. Of course this is not to be done till after ossification or after puberty; before this time the teeth are seldom sufficiently developed to make a satisfactory final regulation. If they are of a triangular variety, the earlier work should be especially directed to the correction of the nasal defect, and the regulation of the teeth left for some years later. A case is reported which he thinks illustrates the truth of this theory. The bending of the septum, he concludes, was due to imperfect articulation and undue vertical pressure from the developing maxillary bones, the pressure being relieved by separation of the maxillæ. The cartilage was pressed into the groove thus formed and the condition relieved.

28. Gonorrhœa.—After a review of the literature Bierhoff gives an account of his experience with the modification of Lewin and Frank's method for the abortive treatment of gonorrhœa with protargol injections. He has employed the method in 30 cases. In 50 per cent. the result was positive and in 15 negative. In the positive cases the gonorrhœa had distinctly disappeared in 12 on the second day, in one on the third, in 2 on the fourth. Of the negative cases the gonorrhœa had definitely disappeared in 2 after the fifth day (and thus might perhaps be included among the positive), in 3 cases after the tenth day, in one after the sixteenth day, in 2 after the twenty-first day and in one each after the twenty-second, thirty-fifth,

thirty-sixth and fortieth day respectively. One case is still under treatment. That a posterior urethritis developed in only 2 of the series, he thinks is the best argument for the utility of the abortive treatment.

30. Ocular Signs of Syphilis.—Reber reviews the different ocular lesions that may occur. A syphilitic primary sore is likely to be at the margin or just within the margin of the lids. It may be due to infection carried by the finger, as frequently occurs, or from the use of the tongue for the removal of a foreign body which is a common practice among the lower classes. Secondary syphilis may infect the cornea, uveal tract, optic nerve or retina, but has a marked predilection for the uveal tract. Every iritis is open to the suspicion of being syphilitic until other causes are demonstrated. Choroiditis is perhaps as frequently syphilitic in origin as iritis. It almost always leaves a scar in the choroid that may be studied years afterwards. Iritis, on the other hand, may leave no traces if successfully treated. The optic nerve is as likely to be tertiary as secondary in its involvement. Most frequently involved in the tertiary processes, however, are the intra- and extra-ocular muscles. Finally, tertiary lesions may appear in the lacrimal sac as extensions of similar lesions in the nose and accessory sinuses, and also in the lids as ulcers or broken-down gummas. Gumma of the iris is somewhat rare, but sometimes offers a classic picture of this phase of syphilis. Hereditary syphilis commonly affects the cornea in childhood and young adult life, though the ocular muscles are also sometimes hereditarily involved. Interstitial keratitis is the form usually assumed. The flat nose, bluish-gray white corneas, mouths with scarred corners, depressed cheek bones and imperfect teeth make a clinical picture which should be easily recognized. Deafness is frequently an accompaniment of the ocular lesions. Since syphilis generally attacks the eye savagely, the patient calls for treatment early and the results are, therefore, usually very gratifying. The form of mercury will be determined by the practice of the ophthalmologist, and Reber is convinced that one thing is certain, namely, that the pilocarpin or sweat cure tremendously assists the efficiency of whatever antisyphilitic remedies are used.

31. Nervous Syphilis.—Peter describes the lesions of the central nervous system, in immediate syphilitic infection, summing up briefly that the brain symptoms are multiple and variable in character, and not systematically grouped. Among them are paralysis of the cranial nerves, Argyll-Robertson pupils, irregularity of pupillary margin, inequality of pupils, apoplectiform and epileptiform attacks, recurrent palsies usually without loss of consciousness, numbness in extremities, increased reflexes, headache, vertigo, somnolence and altered mental states. These are signs which point to syphilis of the brain and its coverings. Syphilis of the cord is also distinct in its symptomatology. The essential point is the widespread involvement of the entire cord. There is a distinct group of symptoms, first described by Erb, characterized by a slow oncoming spastic paraplegia, atrophic at times, muscle contractures with bladder involvement, slight disturbance of sensation and a tendency to improve and then relapse. The essential point is the involvement of the entire cord, more extensive in some regions than others, giving rise to complete loss of function in certain parts and preservation in others.

33. New Stain for the Diphtheria Bacillus.—Andrade finds the following a good way of staining which he thinks has advantages. It decolorizes all other bacilli with the exception of the yeast cells and some large non-identified cocci, the bacilli of diphtheria appearing as a pale blue rod with deep reddish-brown granules in the almost colorless field. He uses Borrel's blue, 1 c.c., in 50 c.c. of a watery solution of vesuvin, 1/100,000. The method of staining is as follows: Prepare the films in the usual way. 1, Borrel's blue, five minutes; 2, wash in distilled water; 3, Lugol's iodin solution, one minute; 4, wash in distilled water; 5, decolorize in absolute alcohol until no more blue is given off; 6, wash in distilled water, dry and mount. The smears should be thin and easily spread. The best results are obtained with cultures from eighteen to twenty-two hours old, grown at 37 C.

St. Louis Medical Review.

March 28.

34 The Development and Significance of the Vitreous. A. Koelliker.
35 My Autobiography and Reminiscences. (Continued.) S. Poilak.

Cincinnati Lancet-Clinic.

March 28.

36 The Pollution of Our Water Supplies. W. C. Chapman.
37 Syphilis Hemorrhagica Neonatorum. M. K. Isham.

Northwestern Lancet, Minneapolis.

March 1.

38 *Recent Investigation of Certain Diseases Associated with Bacteriemia: Typhoid Fever, Pneumonia, Scarlet Fever, etc. Ludvig Hektoen.
39 Resection of the Elbow—Osteotomy for an Old Pott's Fracture with Deformity—Cyst of the Thyroilngual Duct—Ovarian Cyst and Pus Tube. J. H. Dunn.

38. Bacteriemia.—Hektoen describes the condition of bacteriemia in three diseases, especially in typhoid where the presence of bacilli in the blood is one of the most valuable diagnostic symptoms. The fact that typhoid bacilli are quickly killed by the human blood and that typhoid bacilli increase in this disease in this medium is explained by him as possibly due to the typhoid bacillus neutralizing, by the production of its destruction, the complement in the blood serum. He also suggests from the evidence that there is really a difference in the biology of the organisms of paratyphoid and typhoid fever. Pneumococcemia in pneumonia is also discussed. It is a constant and characteristic feature. He emphasizes the facts that pneumococci are demonstrable in the blood in certain cases before the primary symptoms can be detected, and that the subcutaneous or intraperitoneal injection of pneumococci into rabbits may give rise to foci in the lungs resembling lesions of lobar pneumonia, and that injection of pneumococci into the bronchi causes a rapid absorption of cocci into the blood. The destruction of pneumococci, he thinks, is largely due to leucocytes, since the blood serum itself is without destructive effect and high leucocytosis is indicative of a favorable prognosis. The leucocytes seem to exert a defensive rôle in pneumonia, and it seems that alcohol and ether have a paralyzing effect on them, as shown in rabbits. The last disease mentioned is scarlet fever, in which the streptococci are in the majority of cases demonstrated in the blood. Whether they are the cause of scarlet fever or not, it may be said that there is a very general invasion of the body in fatal cases. In practically all the cases of scarlet fever there is a great increase in the number of streptococci in the blood. Against the theory of their being the essential germs may be cited the absence of any general invasion of the body by the streptococci in the so-called foudroyant cases of scarlet fever. Furthermore, it is impossible to differentiate the streptococci which occur in scarlet fever from other familiar streptococci, and while one attack of scarlet fever gives rise to a lasting immunity, there is no evidence that an attack of scarlet fever produces any immunity to streptococcal infection. Moreover, in smallpox, diphtheria and measles there is also frequent streptococcal invasion in the blood, yet these diseases can not be said to be due to streptococci. He thinks it reasonable to conclude that while in the cases of the majority of children dying from scarlet fever the death is due to streptococcal infection, there is still no strong evidence of a direct etiologic relationship between scarlet fever and streptococci, even though the latter are of such paramount importance in the disease. There is a great need of an efficient antistreptococcic serum. He also makes the suggestion that there is possibly too little care exercised against the diffusion of streptococci in scarlet fever cases in the hospitals, severe cases being placed alongside the mild ones and the chance of further streptococcic invasion in the latter being thus favored.

Buffalo Medical Journal.

March.

40 Cystitis. J. Henry Dowd.
41 *Modern Management of Inflammation of the Middle-ear and Contiguous Structures. F. Park Lewis.

41. Middle-Ear Diseases.—Lewis describes the methods of treatment of middle-ear disease. He advises that paracentesis should be free, the use of local treatment with cocain and

adrenalin in the early stages before suppuration has commenced, drainage in chronic cases, and the usefulness of limiting the food supply in some early cases to abort acute mastoiditis. The last is strongly suggested by his success in one case in connection with other measures, such as cleansing of the ear and filling the meatus with protargol solution. The conclusions are that every otitis demands careful individual attention and close observation. In a large number of the cases judicious local treatment will render operation unnecessary, but when it is required it should be done early enough to prevent involvements which may prove fatal, and it should be done thoroughly. The main vital structures of the body are involved, and abnormalities of formation are common. It should never be undertaken except by those who have had experience either on the cadaver or have familiarized themselves thoroughly with the bony anatomy and the technic of the operation.

Memphis Medical Monthly.
March.

42 Some Remarks on the Diagnosis and Treatment of Gall-bladder Disease. Edward D. Mitchell.
43 Some Unique and Interesting Cases in a Series of 100 Cataract Extractions. E. C. Ellett.
44 The Etiology and Treatment of Colds. J. W. Price.
45 *Exophthalmic Goiter, Résumé of Cases and Their Treatment. Henry Posert.
46 Decortication of the Kidneys for the Cure of Chronic Bright's Disease. M. Goltman.
47 *Intestinal Parasites. N. F. Raines.
48 Bougie in Abdominal Cavity for Five Days. E. E. Haynes.

45. Exophthalmic Goiter.—Posert opposes surgical treatment as the statistics do not show any more favorable results than with medical treatment. As we do not know which theory of the disease is correct, it is hard to decide between excision and operation on the cervical sympathetic, and the danger of anesthesia is to be considered. Under cocain the operation is bloody and the possibility of fatal hemorrhage is to be considered. A scar is also left and a skillful operator must also be at command, therefore, surgical treatment should not be resorted to until other means have failed. The method he prefers is the use of faradic electricity. It is a nerve stimulant, produces a better blood supply, promotes metabolism and prevents the rapid proliferation of connective tissue which strangles the cells and inhibits the natural function. Nine cases were under his care, of whom five recovered, one died from intercurrent disease and three others have been lost sight of.

47. Intestinal Parasites.—Raines reports a case in an infant of twenty months who, in two weeks, passed 1,992 round worms, ranging from one to nine inches in length. The medication was santonin and calomel, followed by castor oil, and a salt enema. The mother, a mulatto, stated that the child had sneezed out a worm while at table one day, the first one seen.

Providence Medical Journal.
March.

49 *Oysters and Sewage in Narragansett Bay. C. A. Fuller.
50 Report of a Case of Cesarean Section in a Difficult Labor Resulting from Ventrofixation of the Uterus. Charles W. Higgins.
51 Nephrolithiasis or Stone in the Kidney. John W. Keefe.
52 Hypertrophic Cirrhosis of the Liver. Hanot's Cirrhosis. George B. Mathews.
53 The Diagnosis of Gonorrhea. Plea for Systematic Examination for the Gonococcus in All Cases of Urethral Inflammation. Harold G. Palmer.

49. Oysters and Sewage.—The state of Rhode Island has leased 3,000 acres of water for oyster cultivation in the Providence River and Narragansett Bay. Fuller has investigated the water there as to the bacteria and finds that the sewage contamination extends for six and a half miles down from Providence on the river. It does not exist in Narragansett Bay, but as the river has more oyster beds than all the remaining Rhode Island rivers, the importance of this sewage pollution is evident. Narragansett Bay proper is not polluted by the sewage of either Providence or Fall River.

Journal of Cutaneous Diseases, New York.
March.

54 *Some Additional Cases of Blastomycetic Dermatitis. T. Caspar Gilchrist.
55 Case of Lymphatic Leukemia with Purpura. Frederick C. Shattuck.
56 *Removal of Warts, Moles and Other Facial Blemishes. Geo. T. Jackson.

54. Blastomycetic Dermatitis.—Gilchrist reports several new cases, quoting one from McCarrison, published first in the *Indian Medical Gazette*, which is of interest as giving a new locality for the disorder. As far as the treatment is concerned, the administration of potassium iodid internally as suggested by Bevan, as well as exposure to the *x*-rays until a mild burn is produced, will, he thinks, cure the condition except in severe systemic cases. He remarks on its wide distribution, cases having been recorded in Germany, France, Italy, England, South America, India, as well as over 40 cases in this country. Another point of importance is the confirmation of Hektoen's observation that the blood of a patient suffering from this disease will agglutinate the blastomycetes.

56. Warts and Moles.—Jackson describes the methods of getting rid of facial deformities and warts. The ordinary wart is not common on the face. In elderly persons the senile wart may appear and may turn into an epithelioma. The best treatment for the seed warts when practicable is to scrape them off with a curette, a few at a time, touching the surfaces left with pure carbolic acid. Where this is not practicable the best method is to apply to the tumor a saturated solution of salicylic acid with collodion. By repeated applications it will come off. It must be remembered that these things disappear of themselves in time, and nothing should be done that will leave a scar. Filiform warts should be snipped off with a clean pair of scissors, and the base touched with pure carbolic acid. Senile warts may be removed with saturated salicylic acid solution, but if they show any tendency to enlarge they should be treated as if they were an epithelioma, thoroughly curetted and the base cauterized with nitrate of silver or treated with arsenical paste or chlorid of zinc. The tendency to become malignant must be kept in mind, and any trifling treatment is worse than nothing. Nevi appear in various forms, as the common vascular nevi or telangiectasis, port-wine marks and spider cancers, or they may take the form of vascular tumors. Pigmented nevi are sometimes spoken of as permanent freckles, and often long fine or coarse hairs will be found growing in them, forming the hairy nevus. Fibrous nevus is a fibroma, and varies from a small French pea to a small marble in size. To remove vascular nevi of all kinds nothing is so good as liquid air. One or two freezing applications with this agent carries them off, though it may cause a great deal of pain. Electrolysis is another reliable agent. In simple telangiectases the vessels may be destroyed by passing a fine steel brooch into their course and using a current of about 2 milliamperes for half a minute. In so-called spider cancer the best plan is to pass a fine cambric needle into the middle of the prominent point and turn on a current of two milliamperes for a minute to destroy them. A red-hot needle or a drop of fuming nitric acid will do the same, but may leave a scar. In children they may disappear, and it is well to wait for a while. Painting the parts with collodion will perhaps do some good. Where pressure can be made, a bandage may be used, but the danger of producing sloughing must be considered. Port-wine marks are very satisfactorily treated with galvanism, but the treatment is a little tedious, and fuming nitric acid, the acid nitrate of mercury or ethylate of sodium may be employed, applied with a sharpened stick wound with absorbent cotton, in a series of dots. Cavernous angioma may be possibly destroyed by electrolysis, or if that can not be used, by touching them with fuming nitric acid or puncturing with a red-hot awl, allowing it to cool on the spot. Pigmentary nevi may be destroyed by electrolysis of fuming nitric acid, which will give more satisfactory results in the larger ones. Pure carbolic acid will remove some of those of a light-brown color; glacial acetic acid will remove these nevi. Hairy nevi are satisfactorily removed only by electrolysis. It should be used as in removing superfluous hairs, and if these occur they should be destroyed before the underlying nevus is attacked. Fibrous nevi can, of course, be cut off, but electrolysis will be more painless and equally effective. Freckles resemble pigmentary moles, but are not permanent. Jackson's favorite prescription for preventing freckles is calamin 1.3, zinc oxid 4, glycerin 8, aqua calcis 24, aquæ rosæ ad 120. The face should be kept covered with this lotion when out of doors. There is little use

of removing freckles, for they return. They may be blistered out or faded out with peroxid of hydrogen. Usually brides apply for this treatment. Xanthoma, another facial blemish, is a yellow patch which comes on the eyelids. Electrolysis is the best agent for its removal. In conclusion, Jackson speaks of the removal of hairs and claims that the electrolytic treatment, if done by an experienced hand, is perfectly successful. Radiotherapy has been proposed, but is still on trial.

Indiana Medical Journal, Indianapolis.
March.

57 *Is the Usual Treatment of Post-partum Hemorrhage Correct? W. Gaston McFadden.
58 Insomnia. Eliot Gorton.
59 Berlin as a Post-graduate Center. C. R. Schaeffer.

57. Post-Partum Hemorrhage.—McFadden opposes the teaching that it is necessary to remove the clot in cases of post-partum hemorrhage. He says let us consider the physical conditions. We have a large coagulum formed, assuming the general contour of the surrounding walls, perhaps slightly pressing against them. You introduce the syringe with a long flexible catheter attached, and press it up to near the fundus, keeping the point of the catheter in contact with the uterine wall, just as you do in introducing the blade of your forceps. The syringe should be filled with Monsel's solution, and as you press it out it will trickle down the concavity of the uterine walls and will be kept in close contact with them by the retained coagula, the removal of which would disturb the open sinuses and increase the flow of blood. He would encourage the formation of coagulation rather than remove the clot, using merely very gentle pressure on the fundus until the uterus shows no further disposition to dilate and the mouths of the bleeding sinuses are closed. Then after the inertia of the organ passes away it will resume its normal physiologic function of contraction and expel the clot by its own restored muscle force.

American Medical Compend, Toledo.
March.

60 The Best Method in the Treatment of Tuberculosis. W. A. Dickey.
61 Epileptic Automatism, with Report of a Case. Charles J. Aldrich.
62 *Echinacea.—Some of Its Uses. W. F. Shumaker.
63 Measles. W. H. Baldwin.
64 Mesogastrium—from Personal Autopsic Abdominal Inspection in 400 Males, 150 Females and 60 Children. Byron Robinson.

62. Echinacea.—Shumaker gives the results of administration of this drug, the modus operandi of which he can not explain, the preparation being the fluid extract of the root—dose ¼ to ½ fluid dram—or specific echinacea—dose 5 to 30 drops. He finds that the glandular system seems to be stimulated, the stomach improved in its functions, the appetite increased, while the bowels operate better and the nutrition is improved. He thinks the drug stimulates the retrograde metabolism better than any single remedy known. He has used it in infants a few days old, and at every age without any bad results. He thinks it specially valuable in typhoid fever, in which it can be given without interruption from the start with any kind of temperature. In smallpox it relieves the itching and shortens the febrile period, and also modifies pustulation. In anthrax it prevents the formation of new colonies or boils and causes subsidence to a certain extent of those already existing. The dose should be large and repeated every hour until twenty-four or thirty-six doses have been taken. If any of the abscesses have an opening, the remedy should be applied locally in the strength of 1 part to 3 parts of boiled water. As a remedy for burns it has no equal, and less cicatricial tissue follows its use than with any other remedy. He uses echinacea 1 part, boiled water 2 to 6 parts, locally applied, keeping this up until the healing process separates the saturated gauze from contact with the part. In senile gangrene his confidence in its usefulness has been built up on the results of its use in less than a dozen cases. It stops sloughing and encourages the line of demarcation. In snake bite he has had no experience with it, but where rattlesnake bites are frequent, many cases are reported by those whose integrity he can not doubt, testifying to its value.

Journal of the Kansas Medical Society, Topeka.
March.

65 Syphilis. (Concluded.) Mayer Shoyer.
66 Treatment of the Chancrous Stage of Syphilis. Hugh Wilkinson.
67 *The Loco Disease. L. E. Sayre.
68 An Unusual Effect from Irritation of the Ulnar Nerve. N. J. Saunders.
68½ Case of Acute Bilateral Facial Palsy with Complications. S. Grover Burnett.
69 A Unique Case of Diphtheria in Which Antitoxin Was Used on the Eighth Day with Excellent Effect. W. V. Tucker.
70 Nitrous Oxid and Ether Sequence. L. S. Chamberlain.

67. Loco Diseases.—Sayre is the dean of the school of pharmacy in the University of Kansas, and has chemically analyzed the *Astragalus mollissimus*, the weed to which is generally attributed the so-called loco disease in cattle and horses. He finds no constituent in it which accounts for the condition, but does think that much may be due to fine irregular hairs which grow on the surface of the leaves. He has extracted a new crystalline substance, but this has shown as yet no toxic activity, and another from a fresh plant, which seemed to be neutral, but has an acid reaction toward some of the bases. This, however, has as yet been obtained in too small quantities to be tested physiologically.

Medicine, Detroit.
March.

71 *Pathophysiology of Epilepsy and Its Therapeutic Relations. James G. Kiernan.
72 *The Actual and Comparative Resistance of Acid-fast Bacilli. Randle C. Rosenberger.
73 Case of Stricture of the Esophagus, Complicated by Subdiaphragmatic Abscess, Localized (Intrafocar) Empyema, and Purulent Peritonitis. Thomas L. Coley.
74 *Pseudoparasitism Caused by the Common Clothes Moth. Joseph McFarland.
75 Remarks on Syphilis of the Nervous System. Hugh T. Patrick.
76 *Practical Clinical Notes on the Administration and Action of Iodonucleoid, or Organic Iodin. G. Frank Lydston.
77 *The Serum Treatment of Hay Fever. Lewis S. Somers.
78 The Anterior Fontanelle. J. R. Clemens.
79 *Graves' Disease and Its Relation to the Psychoses. Arthur W. Rogers.
80 *The Prevention of Heart Disease. Robert H. Babcock.

71. Epilepsy.—In this first communication Kiernan discusses the pathology of epilepsy, the portions of the brain involved and the causes of convulsions. The great elements in epilepsy are the cerebral irritability, the excitability and the autotoxic state that exists. Elimination is checked, toxic material accumulates and the convulsive centers are excited. Epileptic instability is essentially the lack of balance of the degenerate or hereditary defective, plus, not rarely, a higher ethical and intellectual background.

72. Acid-Fast Bacilli.—Acid-fast bacilli, both the pathogenic and other kinds, and their literature are reviewed by Rosenberger, who reports experiments made with three-weeks' old cultures of the organisms. He states his conclusions that in doubtful cases in which acid-fast bacilli are encountered, a diagnosis of tubercle bacilli can be positively made by after-treatment of the stained spread with sweet spirits of niter or glacial acetic acid, which completely decolorize other acid-fast organisms than the tubercle bacillus, such as the grass and butter smegma bacilli. Where only a few organisms are found inoculation experiments should be made.

74.—This article appeared elsewhere. See THE JOURNAL of March 19.

76. Iodonucleoids.—Lydston concludes that this is a non-irritating and thoroughly assimilable preparation of iodin, less likely to produce iodism from a given quantity of the contained iodin than any of the iodin salts he has used.

77. Hay Fever.—First referring to Dunbar's serum, Somers gives his own experience with a serum made from animals inoculated with the pollen of golden rod, and employed both as a serum and as a powder. He finds that it produces a prompt and positive amelioration of the symptoms of fall hay fever in the majority of cases, and in a smaller number this favorable result is soon accompanied by the complete disappearance of the affection. Where there is little or no action after its use, pollen evidently does not predominate as an etiologic factor, but whenever results are obtained they are favorable. While he can not speak from personal experience on the effect of this serum on hay fever occurring at other

times of the year than the fall or when given in advance of the attack, it is certainly decidedly palliative, irrespective of the severity of the attack. Its effects on future attacks remain as yet unknown. Larger experience may modify some of these statements.

79. **Graves' Disease.**—Rogers claims from observation of 13 cases in the Milwaukee Sanatorium, that while there is no characteristic psychosis, his experience coincides with that of the great majority, that in three-fourths of the cases the maniacal types are found. The physical symptoms of the disease are not modified by the mental condition. He also holds that Graves' disease is indicative of a neurotic temperament and the mental and physical symptoms are both evidence of the same defect. The insanity is a further development of a neurotic and hysterical condition observed in even the mildest cases. Graves' disease as a rule does not make the prognosis of the insanity any less favorable.

80.—See abstract in THE JOURNAL, xli, p. 1040.

Physician and Surgeon, Detroit and Ann Arbor.
January.

81 *Mitosis in Circulating Blood. George Dock.
82 Case of Infection with Bacillus Pyocyaneus with the Primary Focus in Decubitus and with Special Reference to the Hemolytic Action of the Organism. Frances N. Boynton.
83 Pelvic Inflammation from the Standpoint of the General Practitioner. Reuben Peterson.

81. **Mitosis in the Circulating Blood.**—After first giving a résumé of the literature, Dock reports his own observations. The material included 20 cases of myelogenic leukemia, 3 of chronic, small-celled leukemia, 2 of acute leukemia, 2 of fatal megaloblastic anemia, 40 cases of chronic pernicious anemia and several hundred cases of secondary anemias, chlorosis and leucocytosis. Mitotic figures were found in both cases of acute anemia, in 2 of chronic pernicious anemia, in 1 of severe anemia with splenomegaly in an infant, not rachitic, but possibly syphilitic, in 8 cases of myelogenous leukemia and in 1 case of acute leukemia. Most of his examinations were made on preparations fixed in ether and alcohol and stained with hematoxylin and eosin. In the mitoses of 7 cases of leukemia, in severe anemia and in 3 cases of leukemia only the red cells were involved. He has never encountered a lymphocyte undergoing mitosis in the blood nor has he ever seen it in polymorphonuclear leucocytes. The occurrence of mitotic figures in normoblasts has rarely been noticed by previous writers, but in leukemia many of the most unmistakable figures were in cells, not much above the average size. Some years ago he expressed the opinion that mitoses are more frequently found in white than in red cells in leukemia, but a larger experience has made him reverse this opinion. The number of mitotic figures varies much in different cases, and in the same case at different times, and the phases of mitosis offer some interesting facts. The preparatory phase in which the chromatin shows a coarse meshwork, is strongly suggested by many nucleated red cells, especially certain megaloblasts. The earliest appearance that can be positively identified is the spirem with rather coarse skein, which has been rare in his preparations. The metaphase is rather more frequent, but the commonest figure by far in red cells and leucocytes is the diaster without signs of division of the cell body. In trying to discover the significance of the presence of mitotic processes in circulating blood, he has examined the associated conditions. The mitotic red cells in leukemia are not encountered merely in cases of the greatest anemia, nor are they always met with in these cases. The facts on the whole seem to go far toward the explanation of the phenomenon. The presence of both the nucleated red cells and myelocytes indicates a defect in the blood-forming organs. The presence of mitoses in cells can easily be explained by assuming that cell formation is active and that some of the cells happen to migrate in some stage of division. In the case of nucleated red cells one is tempted to see a teleologic process and suppose that mitoses indicate active regeneration of the blood, but this can not easily be proven. At present Dock does not think we are justified in claiming that mitosis in the circulating blood has any definite diagnostic or prognostic value. The atypical mitosis is rather more serious in its indications than the normal process, but probably only because it is found with extremely active cell development and because this is often a part of unfavorable conditions.

Medical Standard, Chicago.
March.

84 *Autointoxication and Its Treatment. Heinrich Stern.
85 A Neurologic Clinic (Spasmodic Torticollis, etc.). Sanger Brown.
86 The Diagnosis and Treatment of Iritis. Thomas Faith.
87 *Surgical Complications in Typhoid Fever. Frank E. Edwards.
88 Two Consecutive and Interesting Cases of Nasal Reflex with Almost Identical Symptoms. E. E. Clark.
89 *Some Methods of Treatment of Cardiac Failure. Daniel N. Eisendrath.
90 The Present Status of the Profession in the Treatment of the Opium Habit. A. R. Williamson.

84. **Auto-intoxication.**—This article, which is a preliminary paper of a series, gives the history of the theory of auto-intoxication and considers the subject in general. The author gives the system of his classification, which will be followed in the subsequent papers: "1. Intestinal auto-intoxication: absorption autotoxicoses. 2. Catabolic auto-intoxication: retention autotoxicoses; autolysis; acidosis. Histolytic autotoxicoses; nucleolysis. Histoenzymic autotoxicoses. Combined retention—histolytic autotoxicoses."

87. **Typhoid Fever.**—Edwards describes the method of uterine anastomosis used in a case of resection from typhoid perforation. A bobbin formed of a coiled spiral with a thread through each end forms the support, which is extracted from the bowel at the close of the suture, by being unscrewed through the last stitch as a shirt stud is removed from a shirt. The substance he prefers is celluloid, though he sees no reason why hard rubber or leather might not also be used.

89. **Cardiac Failure.**—Eisendrath had experience with a number of cases at the time of the late Iroquois Theater fire in which he used the methods of resuscitation described in cases of cardiac failure in some of which asphyxia was apparently complete. One of the methods mentioned is the use of adrenalin; another that of Koenig, consisting in making on the precordial region a number of sharp pounding or pressure movements. He has tried this method in nine cases in cardiac syncope from chloroform. The technic consists in making 120 movements per minute over the precordial region. A modification which might be tried in extreme cases is that of resecting the fourth and fifth costal cartilages and taking hold of the heart, using direct massage. He also refers to an English surgeon's method of direct massage through the diaphragm. The second method was the one proposed by Laborde, making rhythmic traction on the tongue 16 to 18 times per minute, bringing it out as far as you can each time. The third method was the administration of adrenalin solution as suggested by Crile. A boy was brought into the hospital with a crushing injury of both legs and in a severe condition of shock. He was given 5 minims of a 1-1,000 solution of adrenalin hypodermically and then 1 minim of the 1-1,000 solution every hour for five hours. Transfusion was also employed. He improved and made a rapid recovery.

Virginia Medical Semi-Monthly, Richmond.
February 26.

91 The Importance of Reflex Symptoms in Gynecology. Charles G. Cannady.
92 Ectopic Gestation. M. Smith.
93 Proposed Constitution of the Medical Society of Virginia. E. T. Brady.
94 Treatment of Hip-joint Disease. Wm. P. Mathews.
95 The Early and Late Symptoms of Hip-joint Disease. E. J. Moseley, Jr.
96 Visit to Professor Kehr's Clinic in Halberstadt, Germany. I. S. Stone.
96½ Neuritis. E. M. Magruder.

Northwest Medicine, Seattle, Wash.
February.

97 Address. King County Medical Society. J. P. Sweeney.
98 Perineal Prostatectomy. Robert Telford.
99 Relation Between Diseases of the Nose and Diseases of the Eyes. Hamilton Stillson.
100 Should It Be a Fixed Rule Always to Use Antiseptics on Our Hands? E. M. Brown.

Medical Mirror, St. Louis.
December.

101 *The Erotopath in Society. Charles H. Hughes.
102 Bubo. Norman Barnesby.

101.—This article has appeared elsewhere. See THE JOURNAL, xl, title 66, p. 738.

Vermont Medical Monthly, Burlington.
January 25.

103 Appendical Colic. A. Lapthorn Smith.
104 The Treatment of Effusion of the Chest. William W. Seymour.
105 Electricity in the Treatment of Diseases of the Stomach. G. G. Marshall.
106 Chloroform and Consciousness. Charles Caverno.

Cleveland Medical Journal.
March.

107. Traumatism of Circumflex Nerve in Shoulder-joint Injuries. Frank E. Bunts.
108 Report of Case of Pulmonary Tuberculosis and Transposition (?) of the Heart. M. J. Lichty.
109 Anchylosis and Caries Following Gonorrheal Infection. C. A. Hamann.
110 Case of Sympathetic Inflammation of Eye. William E. Bruner.
111 Plastic Operations to Elongate Cicatricial Contractions Across Joints. Stewart L. McCurdy.

Woman's Medical Journal, Toledo.
January.

112 Filaria. (To be continued.) Mary M. S. Johnstone.
113 Burns: Prognosis and Treatment. Laura H. Branson.

Canada Lancet, Toronto.
March.

114 Ultramicroscopic Organisms. J. J. Mackenzie.
115 Visceral Manifestations Occurring in the Erythema Group of Skin Diseases. Robert D. Rudolf.
116 The Treatment of Various Forms of Cutaneous Disease by the X-rays and Light. Allan W. Jamieson.
117 Alcohol in Medicine and Surgery. John Ferguson.
118 Infectious Diseases Among School Children. Charles Sheard.
119 Systematized Compulsory Drill. C. A. Hodgetts.

Canadian Journal of Medicine and Surgery, Toronto.
March.

120 How to Prevent, Limit and Suppress Outbreaks of Infectious Diseases Among School Children. Charles Sheard.
121 Relative Prevalence of Contagious Diseases in Children of School Age. P. H. Bryce.
122 The Necessity of Physical Education in Our Schools and the Utility of Military Instructors. Charles A. Hodgetts.
123 Marmorek's Serum for the Prevention and Cure of Tuberculosis. Andrew Eadie.
124 Ruptured Tubal Pregnancy. Lester Keller.

Medical Review of Reviews, New York.
February 25.

125 Notes on Dermatology. Isador Dyer.

Carolina Medical Journal, Charlotte.
February.

126 The Microscope in General Practice. Thomas R. Little.
127 *Intestinal Obstruction from Meckel's Diverticulum. Stuart McGuire.
128 Gonorrhea: Its Relation to Marriage. J. A. Childs.
129 Some Mistakes of a Country Doctor.

127.—This article has appeared elsewhere. See THE JOURNAL of March 5, title 122, p, 682.

Medical Times, New York.
March.

130 The Restorative Influence of Ozone on the Blood. G. Lenox Curtis.
131 Puerperal Eclampsia. Geo. W. Griffiths.
132 Phases in the Treatment of Children. George R. Wilson.
133 Recent Advances in the Study of Heart Conditions. M. E. Fitch.
134 Cancer of the Larynx and of the Breast. M. Shellenberg.
135 Functional Diseases of the Liver. Louis F. Bishop.

Stapler's Rarefier—A Correction.—In the abstract of Dr. Stapler's article in THE JOURNAL, March 12, 131, p. 679, it was stated that 18 cases out of the 24 were cured or fairly in a way to effect a cure. It should have been stated that 10 cases were cured, 8 of which are still under observation and producible for evidence.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.
March 5.

1 *The Inception of the Rhythm of the Heart in the Ventricle as the Cause of Continuous Irregularity of the Heart. James Mackenzie.
2 *Some Hemoglobin Investigations in Cases of Chronic Heart Disease. Theodor Schott.
3 *Improvements in Dietetics of Diabetes. James Sawyer.
4 Recurrent Fever Associated with Spirilla in the Blood in a Patient from Gibralter. Patrick Manson.
5 *Veronal: A New Hypnotic. Alfred C. Jordan.
6 *Use of Oxygen Gas in Distending the Bladder for Cystoscopy. A. Galbraith Fenton.
7 *Aseptic Surgery in Theory and Practice. Charles B. Lockwood.

1. **Cardiac Rhythm.**—This paper seeks to explain a special form of cardiac irregularity where the heart is at no time regular and two beats of the same character do not follow each other. This has been known under the names of delirium cordis, mitral pulse, pulsatio irregularis perpetua, etc. Mackenzie's explanation of the condition is that it is due to the ventricles taking on the inception of the rhythm instead of it beginning with the large veins as they enter into the auricles, as is normally the case. Whenever there is a continuous irregularity as distinct from occasional or rhythmic irregularity, the ventricle is giving the rhythm. The cause is to be sought in the irritability of the heart muscles and not in a disorder of its nervous regulation. The exceptions to this are rare. Hering's experiments demonstrate that a rising ventricular pressure can produce premature contraction of the ventricle apart from its nervous connections. Mackenzie has had several opportunities of noticing the beginning of symptoms associated with attacks of continuous irregularity and is convinced that dilatation and ineffective action of the heart is secondary. When irregularity begins there is an uneasiness in the chest, shortness of breath and an increasing sense of weakness. Coincident with these are definite changes in the circulation, the radial pulse becomes larger and compressible, the veins of the neck are engorged, the face dull and dusky and the lips blue. The area of the heart's dullness extends beyond the right of the sternum and the superficial structures of the chest wall become tender to pressure, as he has noticed in dilatation of the heart. These symptoms are those met in advanced cases, and he suggests that it is the irregularity that is the cause of the inefficient heart's action for this reason and not dilatation that causes the irregularity. The treatment should be directed to the lessening of the irritability of the heart muscle and to protect it from being exposed to the causes that increase its activity. The best remedy he finds is prolonged rest in bed.

2. **Hemoglobin Investigation.**—Schott has used the Dare hemoglobinometer and reports cases showing the effect of the Schott treatment, not merely on the heart diseases, but on the general condition of the body as well, including increase of the hemoglobin percentage.

3. **Diabetes.**—The researches of Mossé published two years ago show that potatoes are often well borne in diabetic glycosuria and are capable of being substituted for wheat and bread in proportions enough to keep up the alimentary ratio. To the potash salts Mossé attributes the superiority of the potato diet. Sawyer's experience has confirmed these findings and he points out that to retain the potash salts in cooking potatoes should be steamed with the skins on. He also suggests the use of potato flour in bread, cake, etc., for diabetics, and gives the following prescription:

Bran and potato bread. Take half a pound of flour of steamed potatoes, quarter of a pound of bran, half an ounce of German yeast, half an ounce of butter, one egg. Twenty-four hours before making the dough cook the potatoes by steaming them in their jackets, then peel and break up into flour with the fingers. Mix all the ingredients together, and let the paste stand near the fire for an hour to rise. Bake in greased tins for an hour and a half.

He also lays down a diet for diabetics as follows:

May Eat.—Butcher's meat of all kinds, except liver. Pork, ham, bacon, poultry, game, potatoes steamed in their skins, fish, oysters, crabs, lobsters. Animal soups, not thickened except by potatoes. Mutton broth, beef-tea. Bran and potato bread or biscuits, potato cakes, eggs, cream, butter, cheese, greens, watercress, mustard and cress, lettuce, mushrooms, nuts, jelly or custard (unsweetened).

May Not Eat.—Any bread or biscuits but those made of bran and potato. Sugar, asparagus, broccoli, cauliflower, carrots, parsnips, French beans, peas, turnips, arrowroot, macaroni, rice, sago, tapioca, vermicelli, pastry excepting potato cakes, puddings, fresh and preserved fruit.

May Drink.—Water, tea, coffee, soda-water, claret, hock, spirits and water unsweetened, bitter ale (very sparingly), milk (very sparingly).

May Not Drink.—Cocoa, chocolate, champagne, porter, stout, home-made wines, liqueurs, cider, sweet wines, ale.

5. **Veronal.**—Jordan thinks veronal is a useful means of producing sleep in doses of 4 to 5 grains. Larger doses may be re-

quired in severe mental excitement, etc. He says that no remote after-effects of any kind have been observed, that immunity from the bad effects on the vital organs is the chief recommendation, and that there does not seem to be a probability of creating veronal habit.

6. **Oxygen in Cystoscopy.**—Faulds prefers the use of oxygen gas for dilating the bladder because he thinks it has a beneficial effect on the accompanying cystitis and a clarifying action on the urine. It should be used with great caution. The patient should be warm and comfortable and the gas should be pure. The gas must enter the bladder slowly and with great care. If cystitis exists it will be necessary to use a local anesthetic. Oxygen can be left in the bladder without disadvantage and often to the patient's benefit.

7. **Aseptic Surgery.**—Lockwood's third lecture treats of the accurate closure of wounds, drainage, dressings and the influence of environment in operation. He speaks highly of the use of transplanted skin flaps as doing away with the necessity of skin grafts, being better in some respects in its results. Drainage, he thinks, is unnecessary, excepting in infected wounds, though in certain operations, like those on the gall bladder and rectum, it is indispensible. The essential qualities of the dressing are sterility and dryness. He still uses the outer Listerian dressing, which has been largely abandoned in general practice. He finds it specially useful in the radical cure of hernia and in cases of laparotomy when vomiting is likely to occur. In hot weather it can be dispensed with after the first forty-eight hours. The lecture is largely taken up with the effects of different environments on the prognosis of surgical wounds and is illustrated with a number of cases.

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The Lancet, London.

March 5.

8 *The Evolution and Action of Certain Muscular Structures of the Heart. Arthur Keith.
9 *The After-treatment of Head Injuries. R. Crisp English.
10 Anti-malarial Operations at Mian Mir (Punjab). J. W. W. Stephens.
11 *Motor Symptoms of Mania and Melancholia; with a Theory of Their Origin and of the Origin of Delusions Arising in These Conditions. W. H. R. Stoddart.
12 Four Cases of Tetanus Treated by Injections of Antitoxin into the Spinal Theca. Cuthbert S. Wallace and Percy W. G. Sargent.
13 *Anatomical Characters of the So-called Filaria Perstans and on the Modes of Infection Thereby. H. Charlton Bastian.
14 *Congenital Hypertrophic Stenosis of the Pylorus. Edmund Cautley.
15 *Red Light in the Treatment of Smallpox. J. T. C. Nash.
16 *On the Distribution of Bacillus Coli in Nature. J. W. H. Eyre.
17 *Case of Paroxysmal Labyrinthine Vertigo Associated with Special Ocular Symptoms and Alleviated by Seton. T. Wilson Parry.
18 *Contribution Towards the Etiology of Alopecia Areata. Arthur Whitfield.

8. **Muscular Structures of the Heart.**—Keith describes the support of the heart in the thorax, the effects of its changes during systole and diastole, and the manner in which different parts of the heart work.

9. **Head Injuries.**—English discusses late traumatic abscesses and traumatic epilepsy. He thinks the operative treatment of epilepsy is not curative, but may be palliative for several years; for this reason operation is not to be discarded. Suitable cases are those in which there is evidence of injury, or the epilepsy is jacksonian with localized convulsions, or the disease has not lasted for more than two years, and there is no neurotic family history. With general convulsions the chances are slight. There are cases in which the relief from fits has lasted for many years, but these are rare, for it is usual for them to return in two or three years. Traumatic insanity is also discussed at some length and the author offers the following conclusions:

1. While some degree of mental impairment is comparatively common after injuries to the head the changes are seldom sufficiently marked to be included under the heading of insanity. 2. Insanity may result from injury to any part of the head. 3. Traumatism leads to insanity in two ways: Direct insanity due to the actual injury to the brain or its membranes apart from hereditary or other predisposing causes, and indirect insanity—that is to say, any form of insanity occurring as the result of lowered resistance of the brain due to injury in patients with a predisposition to insanity, hereditary or otherwise. 4. Every variety of mental change may be produced by traumatism, although some forms are commoner than others. 5. It is at present undetermined whether injury to the prefrontal region is more likely to be followed by mental disturbances than injury to other parts of the brain. 6. Only a small proportion of the cases of traumatic insanity are open to relief by operation, for a localising indication in an accessible region must be present. 7. The results so far have been encouraging, and although the operation must necessarily be exploratory, it is fully justified in suitable cases, especially in face of the otherwise hopeless condition of these patients.

11. **Motor Symptoms in Mania and Melancholia.**—Stoddart holds that in mania an irritating product is formed within the cortical neurons and the frequency of hallucination in mania supports this view. In melancholia, on the other hand, a paralyzing product is formed, and in agitated melancholia there is a combination of deleterious influences—a paralyzing product in the neurons and an irritating body in the plasma which bathes the nerve cell. In a few cases of mania there is, in addition to the irritating body within the nerve cell an irritating body in the plasma. Whether we are to infer a new formation of cytotoxins or increased formation or deficient elimination of substances normally occurring, there is no evidence to show, but he thinks it is well to bear in mind that there is in melancholia a general tendency of the cells in the organism to fail in the excretion of their normal metabolic products. He thinks the delusions of melancholia arise from a feeling of inactivity in the stimulating cortical neurons.

13. **Filaria Perstans.**—Bastian holds that we know very little about the internal anatomy of the *Filaria perstans* and are unable to properly refer it to its true taxonomic position. It is an error, he thinks, to say that nematoids pass through one or more metamorphoses, since so far as known they attain maturity by steady and progressive development. They stand in no need of being harbored by intermediate hosts, but have independent existence from their emergence from the egg, and plants and vegetables in use as well as water may be the real sources through which they attain entry into the human body, where they develop as facultative parasites.

14. **Congenital Hypertrophic Stenosis of the Pylorus.**—Cautley reports a case with certain features which seem to indicate to him that the affection may exist apart from the typical symptoms, that an apparently mild case can induce severe wasting, and that operative treatment is indicated, though food can pass through the pylorus. There is little doubt that the extent of the condition may vary in different cases, and the diagnosis and decision as to operation be very difficult. Mild cases may occur and the symptoms be limited to dyspepsia and occasional attacks of vomiting, but terminating in later life with dilatation of the stomach and hypertrophic stenosis of the pylorus.

15. **Smallpox.**—Nash thinks the red light treatment of smallpox is still a subject for investigation, but that there is some evidence in its favor.

16. **The Bacillus Coli.**—Eyre has investigated the intestines of a large number of animals, including fishes, and in all he found the *Bacillus coli* in abundance. He thinks that further study in this direction is indicated before assuming that the presence of the *Bacillus coli* is always synonomous with sewage contamination.

17. **Meniere's Disease.**—In the case reported by Parry the insertion of a seton in the neck produced marked alleviation of symptoms. He has looked over the literature and finds no cases where a seton has been tried in this condition. His case was a severe one and he believes a milder case would yield much more beneficial results.

18. **Alopecia Areata.**—Whitfield reports four cases of alopecia which had resisted treatment until relief followed attention to ocular defects. He thinks that in some cases nervous irritation consequent on undue effort to focus on fine objects causes the onset of the falling out of hairs in people whose health is not robust, and in any case inquiry into the condition of vision will do no harm.

Indian Medical Gazette, Calcutta.

February.

19 *Blood Examination of 3,400 Cases of Febrile Disease in Bombay. (To be continued.) Arthur Powell.
20 Enlarged Prostate. W. J. Wanless.
21 Cholera Epidemic in Puri Town and District in July, 1902, and Its Spread Throughout Lower Bengal. S. Anderson.

21½ Symblepharon and Its Treatment; Two Cases Treated Successfully by Transplantation of Flaps of Mucous Membrane from the Mouth. Harry Gidney.

19. **Blood Examination.**—In an examination of 3,413 cases, parasites were found by Powell in 2,652. The great majority, 2,542, were malarial. In 94 cases relapsing fever spirilla were found. In 15 cases the plague bacillus and in 1, filaria nocturna. The leucocyte count was also found useful, giving a suspicion of pneumonia, internal abscess, filaria and other worms. He thinks it a safe estimate to say that nine-tenths of the cases of fever in Bombay, which last ten days or more, are due to either tubercle, enteric fever or abscess. His findings confirm Christopher's and Stephens' observations that the large mononuclear cells are always increased in malaria. If after a search of ten minutes no malaria parasite is seen, but the mononuclear cells seem increased, he continues his search, but if their percentage is low, he discontinues the search. In chicken-pox he finds the large mononuclears also increased, and in liver abscess he gets but little help from the blood examinations. Another point which he has formerly drawn attention to is the increase of eosinophiles in case of guinea worms. In 117 cases of plague the blood was examined, and in 15 of these the bacillus was found. In the beginning of the year there was a particular type of septic plague in which the rule was to find the bacillus in every field. The patients always died. He can also confirm Miss Corthorne's observation that the coagulability of the blood as a rule is diminished in plague. In relapsing fever there are many cases which never relapse, and are called malaria. It is only a systematic examination of the blood that determines the condition. He remarks as to the peculiar facies of spirillum fever cases, an ashy complexion, a quiet, sad, resigned, or docile expression which contrasts strongly with the dull, blear-eyed, obfuscated plague patient. Pneumonia is often difficult to diagnose, and he thinks there are cases of so-called pneumonia where the lungs are not involved. Where sunstroke is common, cases of fulminating pneumonia are also found. He asks if some of these cases of sunstroke might not be acute pneumococcus infections. Blood examinations were negative in the majority of cases of plague; also in many cases of pneumonia, tuberculosis, pleurisy, enteric fever and occasionally in venereal diseases, leprosy and liver abscess, smallpox, chicken-pox, etc. He has never seen anything suggestive of Malta fever in Bombay.

Annales Pasteur, Paris.

Last indexed XLI, page 762.

22 (XVII, No. 8.) Recherches sur la fermentation du lait (of milk). H. Tissier and P. Gashing.
23 La garotilha (cattle disease in Brazil). E. Marchoux and A. Salimbeni.
24 (No. 9.) La spirillose des poules (of fowls). Ibid.
25 Emploi de la bombe calorimétrique de M. Berthelot pour démontrer l'existence de l'arsénic dans l'organisme. G. Bertrand.
26 Sur la production de la mannite par les ferments des maladies des vins (in grape diseases). P. Mazé and A. Perrier.
27 Contribution clinique à la sérothérapie de la peste. A. Duprat.
28 Reports of Antirabic Institutes at Lille, Pernambuco and Kharkov.
29 (No. 10.) Sur la resorption phagocytaire des ovules chez les tritons. C. Pérez.
30 *Yeast and Suppuration. E. Sergent.—Levure de bière et suppuration.
31 Recherches expérimentales sur l'inoculation de la syphilis au singe (bonnet chinois). C. Nicolle (Tunis).—Inoculation of 3 monkeys with syphilis.

30. **Yeast in Suppuration.**—Sergent produces an extract of brewers' yeast by maceration of the dried residue after the yeast has been killed with alcohol and the alcohol removed. The extract possesses the same power to cure suppurative processes as the live yeast. He thinks that the pathogenic properties of yeasts should forbid their use alive.

Revue de Therapeutique, Paris.

Last indexed XL, page 1761.

32 (LXX, Nos. 9-11.) *Propriétés physiologiques et thérapeutiques d'un sérum retiré du lait (serum from milk). E. Blondel (Paris).
33 *Tincture of Horse-chestnut in Pelvic Affections. S. A. de Veney.—La teinture de marrons d'inde dans les affections du petit bassin.
34 (No. 12.) Traitement du diabète et de la tuberculose pulmonaire des diabétiques. A. Robin.
35 (No. 13.) La médication hypotensive. H. Huchard.
36 (No. 14.) *Les intoxications d'origine carnée (from meat). Chevalier.
37 (No. 15.) Breast Feeding. L. Dubrisay.—L'allaitement au sein.
38 *Procédé de photothérapie de la variole à emprunter aux Chinois et aux Annamites. J. Regnault.
39 (No. 16.) Foreign Bodies in Stomach. A. Benoit.—Extraction des corps étrangers de l'estomac et de la moitié inférieure de l'œsophage.
40 Nouveaux resultats photothérapeutiques. Foveau de Courmelles.
41 (No. 17.) L'intoxication par les champignons (mushrooms). Chevalier.
42 (No. 18.) Les accidents du sérum antidiphthérique. Leur innocuité. G. Coldefy.
43 (No. 19.) *La neurasthénie d'origine dyspeptique. A. Robin.
44 (No. 20.) *Cocainisme aigu (auto-observation). L. L. Archambault.
45 Le radium. Jumon.
46 (No. 21.) La lecithine. H. Labbé.
47 (No. 22.) Physiologic Study of Convallaria. Laigre.—Muguet et sue de muguet.
48 (No. 23.) Extraits d'organes animaux et extraits d'organes végétaux. P. Carles.
49 Le vin et les boissons alcooliques chez les dyspeptiques. A. Mathieu.
50 (No. 24.) Prophylaxie de la blennorrhagie. J. Janet.
51 Dyspepsie et dyspeptiques. H. Huchard.

32. **Serum Treatment with Whey.**—Blondel ascribes remarkable therapeutic value to subcutaneous injections of what he calls "milk serum." The milk is quickly coagulated by adding an acid and then heating to 100.5 F. It is then neutralized with soda, cooled and filtered through a bougie. Daily subcutaneous injection of 20 c.c. of this serum produces no disturbances or inconveniences in a healthy man, but it evidently stimulates metabolism. In disease it reduces the temperature and lowers the blood pressure. These effects are constant and durable. The mechanism is not that of an antitoxin, but the "lacto-serum" acts by its re-enforcement of the normal processes of defense on the part of the organism against all toxins in general by its oxidases and the leucocytosis which it induces. He cites a number of instances to show its efficacy in various infections. In puerperal fever its action is most beneficent at the stage when the toxins have passed into the blood and the temperature remains high after curetting and disinfection of the uterus. Parallel cases illustrate best of all the advantages of this milk-serum treatment. A little quinin given with the serum seems to enhance its action in puerperal fever. In a severe case of erysipelas the temperature dropped from 40.5 C. to normal in five hours after injection of 10 c.c. of the lacto-serum. The local symptoms also gradually subsided to a complete cure by the sixth day.

33. **Tincture of Horse-Chestnut in Pelvic Affections.**—De Veney confirms by new experiences his previous announcements in regard to the peculiar efficiency of tincture of horse-chestnut for soothing the pain and reducing the size of hemorrhoids. He gives it in 10-drop doses before meals twice a day, increasing gradually by 10 to 15 drops a day, but with great care not to go beyond the dose needed by the individual subject. Too large a dose exaggerates instead of soothing the pains. In his experience this treatment has cured in a single day rebellious cases of hemorrhoids accompanied by rectitis with glairy stools, when the tincture was supplemented by equal parts of tincture of aloes or by a 1 cg. pill of silver nitrate morning and night. In case of indolent hemorrhoids due to habitual constipation, he adds to the tincture equal parts of tincture of nux vomica. He finds the horse-chestnut tincture also useful for external application as an adjuvant in some cases of hemorrhoids and varices, but its principal field is in reduction of congestions in the small pelvis. It acts by means of its influence on the sympathetic system, modifying the circulation throughout the small pelvis, and giving the internist another weapon against the so-called surgical affections of this region.

36. **Intoxication from Meat.**—Chevalier reviews the various symptoms characteristic of intoxication from diseased or rotten meat and botulism. Treatment should be symptomatic. If fifteen to twenty hours have elapsed, the stomach pump will probably be useless and a microbian infection is probably superposed on the intoxication. The intestines should be evacuated and disinfected. For the latter purpose he prefers beta naphthol, benzonaphthol, betol or salol, combined with pulverized charcoal. Bouchard has established that the charcoal

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reduces the toxicity of substances in the intestine. The bile function should be stimulated with calomel and in severe cases the glycogenic functions of the liver may be stimulated with injections of ether. Diuresis should be maintained by drinking freely, especially lactosed milk, which is the most efficient diuretic in such cases. Warm drinks to promote sweating and tepid baths will also be found useful. Convulsions, etc., should be treated symptomatically.

38. **Red Treatment of Smallpox Among the Chinese.**—Regnault describes the methods of treatment of smallpox in China and Annam. The eruption is washed off with a lotion colored a brilliant red with some harmless vegetable dye. The parts are thus stained red. In Annam red curtains are also hung up around the bed. These red applications have been extolled for centuries as effectual in smallpox, which has been known and studied in China for three thousand years.

43. **Neurasthenia of Dyspeptic Origin.**—This article is taken from Robin's work on "Diseases of the Stomach." It treats of the particulars of gastric neurasthenia, the chemical conditions and the therapeutic conceptions of neurasthenia, summarizing in conclusion the indications for treatment and the means of realizing them. After curing the dyspepsia he first tries the glycerophosphates, magnesium or fluorids, sending the patient into the country. If this fails, he tries iron and arsenic, supplemented by strychnin, hypophosphites or phosphoric acid in dosage which he minutely details. If these fail, he abandons drugs and restricts all treatment to physicotherapy, hygiene and psychic measures. If all these fail, the Weir Mitchell treatment may be applied. He relates examples of the various forms of these "nervous echoes" of digestive disturbances.

44. **Auto-observation of Cocain Intoxication.**—Archambault's throat was sprayed with cocain for removal of a small polyp. Between 1 and 2 gm. of cocain were used and symptoms of acute intoxication developed afterward, first bulbar and then cortical, the two phases lasting a total "five hours of horror," as he describes it, barely escaping a fatal termination. He relates in detail the various subjective symptoms, the anesthesia of legs, arms and face, loss of the sense of space, an indescribable anguish with intolerable pains in the heart and stomach region. After three hours of repeated artificial respiration, the head low, sinapisms to the body with 2 c.c. of ether and 1.5 gm. of caffein subcutaneously, the cortical phase developed with violent excitement and exaggeration of the pains. He was unable to leave his bed for six days, but by the tenth day no traces were left of his intoxication experience. [A somewhat similar experience was related by a confrère at a recent meeting of the Berlin Internal Medicine Society, February 15. A physician had swallowed inadvertently a cotton wad soaked with cocain which he had been applying to a papillomatous swelling in the nose. He drank at once some strong coffee and a quantity of brandy, but the excitement and distress were not relieved and the dyspnea became threatening. Artificial respiration had to be kept up until the respiration center could recuperate, and the physician in charge sent to the neighboring fire department for the life-savers. Three men responded to the call, bringing the oxygen apparatus, and as they had been drilled they raised and lowered the patient's arms, while the third squeezed the oxygen bulb at each inspiration. The patient was thus saved after several hours' work. Large amounts of grape sugar were found in his urine during the first three days and also paired glucuronic acid, the latter not vanishing until the seventh day. In both this and the case above the patients thought they were dying, and made arrangements for the funeral, etc. Archambault remarks that the reassurances of the physician are peculiarly needed in cocain intoxication.—ED.]

Archiv f. Verdauungskrankheiten (Boas'), Berlin.

Last indexed pages 619 and 745.

52 (X, No. 1.) *Ueber die pathologischen Veränderungen am Digestionstraktus bei der perniciösen Anemie. K. Faber und C. E. Bloch (Copenhagen).

53 *Unwillkürliche Aerophagie bei Dyspeptikern. A. Mathieu (Paris).

54 *Weber Test for Occult Hemorrhage in Stomach and Intestines. Hartmann (Hamburg).—Ueber Anwendung und diagnostische Verwertung der Weber Blutprobe bei occulten Magen- und Darmblutungen.

55 Zwei durch Balantidium coli hervorgerufene Colitis-Fälle (Balantidium Colitis). W. Robin (Warsaw).

56 Ueber die Pepsin-Wirkung im Magen (in stomach). Schüle.

52. **Digestive Tract in Pernicious Anemia.**—This article, as it appeared in Danish, was reviewed in THE JOURNAL, page 407.

53. **Involuntary Swallowing of Air by Dyspeptics.**—Mathieu has found that 5 to 6 per cent. of all cases of stomach affections in his experience present more or less marked aerophagia. The subjects are unconscious of it and merely complain of the eructation of gases and more or less flatulence. He has established that frequently what they suppose to be an eructation is in reality an involuntary swallowing of air. The flame of a lighted candle held to the mouth does not blow out but remains immovable, showing that there is no emission of air. Sometimes the air is belched up as soon as it enters the stomach, sometimes it accumulates until the distension becomes marked and the air escapes into the intestine with a characteristic sound. One subject found that this swallowing of air occurred more than five thousand times during the day, but never at night or when he was absorbed in his business. The swallowed air may present the complete picture of severe gastrointestinal flatulence. He distinguishes between the aerophagia of nervous dyspepsia, the spastic aerophagia of severe neurasthenia and hysteria and the secondary aerophagia accompanying a severe gastric affection. He describes these forms in detail. As soon as the subjects can be convinced that their troubles are due to this cause they easily conquer it. The spasmodic swallowing can be controlled or prevented by keeping the mouth open, using something to serve as a gag if necessary. The underlying dyspepsia must be treated, and another indication is for measures to reduce the excitability of the stomach. He prefers for this codein and cherry laurel water, but morphin and other antispasmodics may be necessary in certain cases. The best means to abort an attack is a saturated solution of chloroform. He gives it in tablespoonfuls at the beginning and during an attack, mixed with water, to a maximum of 4 to 6 tablespoonfuls a day. Antiseptics for the intestines are not needed. The gaseous fermentations to which the flatulence was ascribed not existing in reality, measures against them are only liable to entail drug gastritis. Isolation may be necessary for severe neurotic cases. (Compare review of Stern's article on the subject, page 676.)

54. **Weber Test for Occult Stomach and Intestinal Hemorrhages.**—Hartmann concludes from his research and experience that occult bleeding never occurs in nervous stomach affections, but that it is liable to be artificially induced even in healthy subjects when the stomach content is siphoned out. He consequently prefers to examine the feces as the routine measure. He has found that the findings of the Weber test are reliable only when no meat has been ingested beforehand, not even well-cooked meat. When used with these precautions and the foresight required it is a very valuable and frequently a decisive means of clinical investigation, especially in case of round ulcer of the stomach. The occult hemorrhages occur in both benign and malignant conditions entailing insufficiency of the stomach functions. The probabilities are in favor of the existence of a carcinoma when the blood findings in the feces are constantly and decidedly positive with good motility, and absence of free HCl and of lactic acid, even when all other signs of cancer are lacking. The Weber test was described in THE JOURNAL, xli, p. 1566, paragraph 92. Hartmann's experience is the result of the systematic investigation of every case of a gastrointestinal affection at the Marien Hospital at Hamburg last winter.

Berliner klinische Wochenschrift.

57 (XLI, No. 7.) Zum klinischen Verhalten des Epithelioma chorioektodermale. L. Landau. Five cases.

58 *Ueber das Ficker'sche Typhus-Diagnosticum. J. Meyer.

59 Antitoxine und Agglutinine im Blut immunisirter Thiere. F. Figari (Genoa).

60 *Transmission of Human Tuberculosis to Cattle. J. Fibiger and C. O. Jensen (Copenhagen).—Uebertragung der Tuberculose des Menschen auf das Rind. (Commenced in No. 6.)

61 *Ist für die Entstehung der Tabes die Syphilis oder ein socialer Factor massgebend? O. Rosenbach.

62 (No. 8.) *Ueber die hemolytische Eigenschaft des Blutserums bei Urämie. H. Senator (Berlin).

63 Movements in Paralysed Ocular Muscles in Case of Korsakoff's Psychosis. A. Westphal.—Ueber Bewegungserscheinungen an gelähmten Augenmuskeln in einem Fall von Korsakowscher Psychose.

64 *Ueber ultramicroscopische Untersuchungen von Glycogen, Albumin Substanzen und Bacterien. E. Raehlmann.

65 *Ueber Hemolyse durch Carcinom-Extracte. Kullmann (Butsbach).

66 *Routes of Tuberculous Infection in Child's Body. Westenhoeffer.—Ueber die Wege der tub. Infection im kindlichen Körper. (Commenced in No. 7.)

67 Das Epitheloma chorioektodermale. L. Pick. (Commenced in No. 7.)

68 Recent Progress in Chemistry of Albumin and Its Clinical Importance. Klemperer. From society report.

58. Fickur's Typhoid Diagnosticum.—See editorial last week, p 775.

60. Transmission of Tuberculosis from Man to Cattle.—Ten cases of clinical tuberculosis are described in detail, the bacilli from which were inoculated into ten calves. In 2 of the cases the bacilli were not at all or very slightly virulent; in 3 weakly and in 5 extremely virulent. Among the 5 cases of apparently primary tuberculosis of the digestive tract in children, the bacilli in all but 1 displayed marked virulence. The only source for the primary tuberculous affection in the intestines which could be discovered in 2 cases was insufficiently sterilised milk. The parents were healthy and no cases of tuberculosis were known in the environment. In both cases the bacilli proved exceptionally virulent for the calves. Fibiger adds that he found evidences of tuberculosis in 116 out of 213 cadavers examined. They included 5 cases of unequivocal primary intestinal and mesenteric tuberculosis, 2 of probably primary tuberculous affections of the digestive tract and 8 of isolated tuberculosis of the mesenteric glands or lymphatics of the colon. This is a proportion of 6 per cent. of all the cadavers examined and of 11 per cent. of the cadavers with a known tuberculous history. The number of children's cadavers was 79, of which 25 were tuberculous, and in 4 the affection was in the digestive tract and evidently primary. This is a proportion of 5 or 6 per cent. of all the children cadavers and of 16 to 20 per cent. of all the tuberculous children. Heller and Wagener published last fall that they found 16 cases among 76 child cadavers, and 28 among 600 cadavers of all ages, the deaths due to various causes. Few are able to examine the digestive tract of child cadavers with Heller's painstaking technic, and consequently more careful examination might show an equally large percentage in others' material. Even as it is, the statistics that have been published show that primary tuberculosis of the intestines is not a rare affection.

61. Is Tabes Due to Syphilis or to Some Social Factor?—Rosenbach sharply criticises the statistics which Erb marshals to sustain his argument that syphilis is the main factor in the origin of tabes. Rosenbach mysteriously hints that they open quite another perspective for the pathogenesis of tabes than what Erb intends. (See page 620.)

62. Hemolytic Property of Serum in Uremia.—Senator has examined the blood of 3 uremic subjects in respect to the hemolytic property. The findings were contradictory. In his last case, which he describes in detail, there was no inhibition of hemolysis while it was marked in the others. He urges further study of the subject and refers to Micheli's recent statement that an antiautohemolytic action occurs exceptionally, independent of morbid changes, but seems to be more frequent in uremia than in other conditions.

64. Ultramicroscopy.—Among the interesting points noted by Raehlmann with the new "ultramicroscope" is that the action of bactericidal fluids can best be studied with this instrument. The cessation of movements among the bacteria occurred at a constant moment for given disinfectants and given strengths. The improvement consists in the focusing of the light on the field, and he found bright summer sunlight the best for the purpose. Chemical changes in fluids can be visually traced and certain physiologic processes divined from the findings. Turning a weak electric current into a fluid containing bacteria and albuminoids caused the entire swarm to rush to the positive pole, while they all returned to their original position as soon as the current was turned off, but not a trace of life could be detected in the fluid thereafter.

65. Hemolysis by Cancer Extract.—Kullmann's research on rabbits has demonstrated that an extract of cancer tissue is powerfully hemolytic.

66. Routes of Tuberculous Infection in Child's Body.—Westenhoeffer believes that Koch is right in attributing minor importance to tuberculous milk and meat as the source of tuberculosis in man, although Koch, he thinks, was mistaken in denying the identity of human and bovine tubercle bacilli. He also agrees with von Behring in ascribing to early infancy the inception of tuberculosis, but he does not regard it in the same light as the latter. His opinion is that the infant becomes infected during the period of the first dentition, when it is putting everything it can reach in its mouth, and the attendants give it what it can not reach, rub its gums, and test the warmth of the milk by touching the tongue to it or putting a finger in it. The inflamed condition of the gums favors infection. As the child cries and is restless, its rattle is picked up from the floor and given to it to bite on, etc. The child creeps on the floor and then sucks its thumb for hours. The mother feels of its gums just after she has been, perhaps, washing the handkerchiefs of her consumptive husband. He appeals that the profession must not wait for the child to be brought for medical advice, but the state, community, societies, the citizen and all who have raised the antituberculosis standard must go to the infant and surround him with hygienic care, transferring him to some other environment if necessary. He thinks that the infant's hands should be washed a hundred times a day if necessary, and nothing should be given back to it which has once fallen on the floor or, better still, not give it anything to bite on. These relations of the nursling to the family are the true source of tuberculosis; infection from cows is unimportant in comparison. He announced in the course of his remarks that the meat of cattle affected with tuberculosis never contains tubercle bacilli, with the sole exception of meat from cattle with generalized miliary tuberculosis.

Centralblatt f. Bakteriologie, etc., Jena.

Last indexed page 693.

69 (XXXV, No. 2.) Die "Streptothrix lingualis" (Syn. Vibrio, Spirosoma linguale) im Munde des Gesunden und des Diphtherischen (in mouth in health and in diphtheria). A. Bajardi (Rome).

70 Origin of a Pink Mold. E. Klein and M. Gordon.—Ueber die Herkunft einer Rosahefe.

71 Der Aspergillus der "Fokelau." C. Wehmer. Indigenous disease in Southern Pacific.

72 Gas-Bildung und Gas-Atmung von Bakterien. A. Schittenhelm und F. Schröter.

73 Zur Lokalisation der Influenza an den Tonsillen. L. Kamen.

74 *Orange-Colored Perspiration. C. O. Harz (Munich).—Pomeranzenfarbiger Schweiss.

75 Die Bakteriologie des Paratyphus. H. Kayser.

76 *Behavior of Tissues in Respect to Tetanus Toxin. A. Ignatowsky.—Verhalten der verschiedener Gewebe des tierischen Organismus gegen das Tetanusgift. (Commenced in No. 1.)

77 Zur Biologie des Milzbrandbacillus und sein Nachweis im Kadaver der grossen Haustiere (anthrax bacillus in domestic animals). J. Bongert. (Concluded.)

78 Ueber ein Elter-Spirillum (in pus). D. Mesiacescu. (Bukharest).

79 Ueber die Diphtherie-Toxin-Kurve. F. Murillo (Madrid).

80 Ueber die Aetiologie der Schlafkrankheit (sleeping sickness). A. Bettencourt, A. Kopke, G. de Resende and Correia Mendes (Lisbon). (Concluded.)

81 *Morphologische und biologische Beobachtungen über einen Fall von Wutkrankheit beim Menschen (hydrophobia). E. Bertarelli and G. Volpino (Turin).

82 *Bacterial Content of Papillary Duct in Cow, Goat and Sheep. O. Uhlmann (Leugefeld).—Der Bakteriengehalt des Zitzenkanals bei der Kuh, der Ziege und dem Schafe.

83 The Giant Trypanosoma Discovered in the Blood of Bovines. A. Lingard (Poona).

84 Study of Natural and Artificial Immunity to Anthrax. O. Rail and A. Petterson.—Ueber natürliche und künstliche Milzbrandimmunität. (Concluded.)

85 The Reactions of the Blood in Experimental Diabetes Mellitus. J. E. Sweet. A contribution to our knowledge of the thermolabile complements.

86 *Die Desinfections Mittel aus der russischen Naphtha. J. Kupala (Tiflis).

87 Ueber die Anwendung des Neutral-Roths (Rothberger) zur Differenzierung von Streptokokken. M. H. Gordon.

88 Cultivation of Bacteria in a Native Mucoid Solution. L. Langstein and M. Mayer.—Versuche von Bakterienzüchtung in einer nativen Mucoidlösung.

74. Orange-Colored Perspiration.—Harz found a small, nonmotile bacillus accumulated thick on and in the hairs in the axillæ as the cause of the orange sweat. It had not caused

any disturbance except the coloring of the sweat, and consequent staining of the linen. He calls it the *Bact. curatum*.

76. Tetanus Toxin in Tissues.—The brain, liver, lungs, muscles and other organs from animals that have succumbed to tetanus are able to induce tetanus when injected into mice. This occurs irrespective of the amount of blood in the tissue scraps. The symptoms observed differ, however, in some respects from typical tetanus.

81. The Negri Bodies in Rabies.—Bertarelli found these bodies in the cadaver of a lad of 12 who had succumbed to hydrophobia. They were found exactly as described by Negri, but he does not think that the causal connection with the disease is yet established.

82. Bacteriology of Milk Ducts in Bovines.—Uhlmann found numbers of bacteria and streptococci in every section of the papillary duct of cows, goats and sheep. It is, therefore, impossible to obtain an absolutely germ-free milk from the domestic animals under any circumstances.

86. Naphtha in Disinfection.—Kupzis states that the alkaline by-products of Russian naphtha possess high disinfecting power. It diminishes in proportion as their boiling point rises.

Deutsches Archiv f. klinische Medizin, Berlin.

Last indexed page 342.

89 (LXXIX, Nos. 1-2.) *Beiträge zur Kenntnis der Blutgerinnung (coagulation). P. Morawitz (Tübingen).

90 *Cutaneous Perspiration. Schwenkenbecher (Ibid.).—Ueber die Ausscheidung des Wassers durch die Haut von Gesunden und Kranken.

91 Perverse Movements of Vocal Cords in Posticus Paralysis. F. Sinnhuber (Berlin).—Klinisches und Experimentelles zur Lehre von den perversen Stimmbandbewegungen bei doppelseitiger Postikuslähmung.

92 Zur Pathologie des Ductus arteriosus (Botalli).—O. Wagener (Kiel).

93 Lung Affections in Measles. C. Hart (Dresden).—Anatomische Untersuchungen über die bei Masern vorkommenden Lungenerkrankungen.

94 *Influence of Blood Pressure on Fluid Interchanges. O. Hess (Marburg).—Ueber die Beeinflussung des Flüssigkeitsaustausches zwischen Blut und Gewebe durch Schwankungen des Blutdruckes.

95 Chemical Changes in Paralyzed and Degenerated Muscles. T. Rumpf, Gronover and Thom.—Weitere Untersuchungen über Polyneuritis und die chemischen Veränderungen gelähmter und degenerierter Muskeln.

89. Study of Coagulation of Blood.—Morawitz ascribes the coagulation of the blood to the concerted action of at least three substances, thrombogen, thrombo-kinase and the calcium salts. The first is found only in the blood and lymph, the second can be produced by all the tissues.

90. Elimination of Water Through the Skin.—Schwenkenbecker thinks that water evaporates through the skin outside of the secretion of the sweat glands. This cutaneous perspiration is a regulating process, but the amount averages as much as 28 gm. an hour for a young man of ordinary size on a moderate diet and at moderate work. He conducted experiments on a large number of subjects, the results of which are tabulated, and the technic described. He comments on the paucity of our present knowledge in regard to the water metabolism, which was his inspiration for the present monograph.

94. Influence of Blood Pressure on Fluids in Tissues.—Hess thinks that the variations in the blood pressure have a direct effect on the concentration of the blood only in the veins, not in the arteries. The concentration of the blood may differ in these two systems. This is soon compensated and regulated by the streaming of the blood into the arteries, and he ascribes to the lungs this regulating mechanism. The rôle of regulator is favored by the independent circulation in the lungs. He describes the mechanism as he understands it, and comments that this promptly functioning regulating arrangement enables the body to supply normally concentrated blood to the organs, even in case of extreme variations in the blood pressure. After loss of blood the organism aspirates lymph at once to substitute the missing quantity of blood, but the restoration of the concentration to normal is a more gradual procedure. He thinks these views explain the changes in the blood at high altitudes, and in case of uncompensated valvular defects. He urges comparative examination of blood taken from an artery and from a vein as liable to solve the problem of the changes observed in these conditions. He gives the particulars of research on 17 dogs, and emphasizes the importance of this regulating function which he has discovered in the lungs.

Therapeutische Monatshefte, Berlin.

Last indexed XLI, page 377.

96 (XVII, No. 10.) Treatment of Deafness with Air Waves from a Siren. A. Muschold.—Behandlung der Schwerhörigkeit mit Luftwellen der Sirene.

97 Zur Behandlung der chronischen Gonorrhoe. E. Falk.

98 Zur Abortiv-Behandlung der Gonorrhoe. F. Fuchs.

99 Zur Therapie des Diabetes mellitus. Lenné.

100 Die physiologische Wirkung des Solbades und des kohlensäurehaltigen Solbades (brine baths). H. Keller.

101 Health Resorts for Scrofulous Children. E. Vollmer.—Seehospize oder Kinderheilstätte in Solbädern.

102 Ueber Ungnentum argenti colloidalis Credé, seine Anwendungsweise und Wirkung. Rommel.

103 Zur Kasuistik der Collargol-Anwendung. P. Bong.

104 *Nose Obturator to Arrest Hemorrhage. E. Aufrecht (Magdeburg).—Eine Nasenobturator zur Stillung von Nasenblutungen.

105 (No. 11.) Zur Cancroin-Behandlung des Carcinoma. A. Hagentorn (Dorpat).

106 *Potassium Permanganate in Acute Opium and Morphin Intoxication. W. O. Moor (St. Petersburg).—Ueber die Behandlung der akuten Opium- und Morphium-vergiftungen mit Kaliumpermanganat.

107 The Ottilie Waters in Therapeutics. M. Helm.—Die Heilwirkungen der Ottiliequelle des Inselbades.

108 Favorable Reports on Hedonal, Citrophen and Ichthyol-Vasogen and Iodin-Vasogen, etc.

109 (No. 12.) Die Anatomie der Kehlkopfpolypen (laryngeal polyps). v. Hansemann.

110 Abdominal Massage in Heart Disease. A. Neumann and F. Penzoldt (Nürnberg).—Bauchmassage bei Herzkranken.

111 Ueber spontane Heilungsvorgänge beim Karzinom. H. Mohr. (Commenced in No. 11.)

112 Ueber Bereitung von Kefir. Hecker.

113 Zur inneren Behandlung der Urethro-Blennorrhoe. E. Saalfeld.

114 Treatment of Corneal Ulcers in General Practice. R. Cramer. —Die Beurteilung und Behandlung der eitrigen Hornhauterkrankungen in der allgem. Praxis.

115 Alcohol Compresses. J. S. Kolbassenko.—Ueber Alkoholumschläge.

104. Nose Obturator.—Aufrecht's convenient little instrument for arresting bleeding from the nose consists of a long, narrow bag of thin rubber, somewhat smaller in diameter at the center. A stiff tube with numerous perforations is inside the rubber bag, and the whole is connected with a rubber bulb. The bag is introduced collapsed into the nose, and then inflated with the bulb.

106. Potassium Permanganate in Opium Poisoning.—Moor's research explains the efficacy of subcutaneous injections of potassium permanganate in morphin poisoning. The permanganate combines with fluids containing albumin to form a powerfully oxidating substance, which is not altered by the blood and yet can give up its oxygen to morphin. No other alkaloid in his tests was oxidized in this way except quinin.

Zeitschrift f. Krebsforschung, Jena.

116 (I, No. 2.) *Cancer and Soil. W. R. Hoeber.—Neubildung und Boden.

117 *Simultaneous Occurrence of Various Tumors on the Same Person. von Hansemann.—Das gleichseitige Vorkommen verschiedenartiger Geschwülste bei derselben Person.

118 Elimination of Chlorids, Phosphates, Nitrogen and Ammonia in Case of Carcinoma. A. Braunstein (von Leyden's clinic, Berlin).—Beobachtungen über die Ausscheidung der Chloride, der Phosphorsäure, des Stickstoffs und Ammoniak bei Carcinom.

119 Cancer on the Island of Helgoland. E. Lindemann.—Ueber Krebs-Statistik auf Helgoland.

120 *Beitrag zur Krebs-Statistik. A. Wolff (Markliissa).

121 *Ein Vorschlag zur Erforschung der Aetiologie des Carcinoms. K. Scherk (Homburg).

116. Cancer and Soil.—Hoeber is "police medical officer" at Augsburg, Germany, and presents a comprehensive study of the conditions which accompany cancer in that city of 84,097 inhabitants. The average death rate is 24.74 per 1,000, of which 5.5 per cent. are due to neoplasms. The number of fatal cancers in women is 65 per cent. to 35 per cent. in men. He gives a number of tables and maps showing the cancer houses, the soil and geological foundation, etc., and the coincidence of tuberculosis. He was unable to discover any connection between the occurrence of cancer and the height, drainage and other conditions of the houses. Both cancer and tuberculosis were most prevalent in the poorer quarters.

117. Simultaneous Cancers of Different Kinds on One Subject.—The coincidence of cancer in the stomach and glioma in the brain has been observed by von Hansemann in one case.

In another a glioma of the brain was accompanied by a cholesteatoma of the base of the brain. The latter case was the more remarkable as the first symptoms were observed after a fall from a horse, the subject an intelligent and previously healthy lad. The coincidence of carcinoma and sarcoma is extremely rare, but he has occasionally encountered carcinomata with sarcomatous stroma. They mostly occur in the ovaries, but he found one once in the esophagus, and once in the gall bladder, or pharynx, and they have been noted in the thyroids of animals. There are not more than 20 on record, and they usually affected young subjects, and were peculiarly malignant. In regard to pluricentric carcinomata, he states that he has seen a number, and notes that the disposition to plural carcinomata is especially marked in the paired organs. He mentions the peculiarity of diffuse carcinoma, involving an entire organ, to retain the function of the normal organ cells, as, for instance, no diabetes occurs in case of diffuse carcinoma of the pancreas, and no compensatory hypertrophy of the sound kidney is observed when its mate is affected with an infiltrating cancer. Superficial carcinoma is frequently multiple, especially the forms which are preceded by some inflammatory cutaneous affection. The coincidence of independent cancers has been observed in only a few instances in his experience. In one case a cancer in the stomach was accompanied by a cancroid on the right foot. In another, a carcinoma developing from an ulcer in the stomach coincided with carcinoma in both ovaries. In another, a carcinoma of the stomach was accompanied by a branchiogenic carcinoma in the neck; another presented a scirrhus of the stomach with an adenocarcinoma in the rectum; and still another, a cancroid in the esophagus with an adenocarcinoma in the stomach. These are all he has found in 1,000 cases of carcinoma since 1895. He has collected 22 examples from the literature in which carcinoma occurred simultaneously at neighboring points or at different parts of the alimentary canal or in parts with no connection between them, the only points in common in the latter group being that both cancers were carcinomata and on the same subject. He has never known of a case in which there were more than two cancers. In conclusion he remarks that the causes of cancer may be as manifold as there are different kinds of cancer. He thinks that the curable cancroids and the peculiarly malignant pluricentral carcinomata may prove to be quite separate entities. The possibility of a parasitic origin seems most probable for certain forms of sarcoma, especially those which develop regularly in multiple eruptions. He regards a parasitic origin as inconceivable for certain kinds of carcinoma and sarcoma, but for other kinds it is possible, but not established to date.

120. **Cancer Statistics.**—Wolff's investigations have revealed a number of cancer nests in his part of Germany, with a population of 11,703, showing 159 cancers in nine years. The stomach was affected in 86, the uterus in 25, and 98 of the subjects were women. In several instances three members of one family were affected. He calls attention to the predominance of cancers in organs with an opening to the exterior, like the stomach and uterus. He also suggests that exposure to the light and air seems to reduce the malignancy of cancer. Cutaneous neoplasms are more benign and exhibit a slower growth than those developing in the enclosed cavities in the body. In order to obtain more concerted action in cancer research he pleads for compulsory notification of cancer.

121. **Etiology of Cancer.**—Scherk suggests the possibility that the cause of cancer may lie in some disturbance in the anorganic balance in the vital processes in the cell. An altered proportion of mineral matters in the blood and organic juices may prepare the soil for bacteria or protozoa with cancer as the result.

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122 (XX. No. 2.) *L'emoantitossina. Figari.
123 Sugli eritrociti granuloso. V. Marzocchi.
124 (No. 3.) *Contributo allo studio del fonomioclono. F. Sicurani (Siena).
125 *Sull'azione tossica di alcuni estratti organici. G. Ghedini (Turin). (Commenced in No. 2.)
126 (No. 4.) *La cefalopina e l'organoterapia cerebrale. M. Sciallero (Maragliano's clinic, Genoa).
127 Tumori del cervello (of brain). A. Testi. (Commenced in No. 3.)
128 (No. 5.) Alopecia areata da trauma. F. Sprecher.
129 Malattia di Dercum con osteomalacia. P. Pennato (Udine).
130 Metabolism in dementia precoz. A. d'Ormea and G. Maggiotto. —Ricerche sul ricambio materiale nei dementi precoci.

122. **Improved Tuberculosis Antitoxin—Hemoantitoxin.**—Maragliano now produces a 20 per cent. solution of his tuberculosis antitoxin in an aromatic and alcoholic vehicle, containing likewise 5 per cent. of hemoglobin and 10 per cent. glycerin. A tablespoonful is administered before meals four times a day, and patients take it with relish. Figari relates that this antitoxin treatment by the mouth has scored in the clinic as fine results as those obtained in experimental research with the antitoxin by the mouth. He gives the details of 18 cases and mentions particularly the marked increase in the agglutinating power and the antitoxic and antibacillary properties acquired by the serum.

124. **Phono-Myoclonus.**—Bernabei applies this term to a continuous rumbling noise heard in the muscles in certain subjects when the ear is applied to any part of the body. The sound is loudest over the front of the chest, legs and buttocks, faintest over the abdomen, extremities, head and neck. The sound is audible whether the muscles are contracting or at apparent rest. Four pronounced cases in which it occurred typically are described by Sicuriani, who attributes the sound to incessant, rapid contraction of the muscle fibrils. All the subjects were neuropaths, and these sounds may aid in the diagnosis in the incipient stages of nervous disease.

125. **Danger of Protracted Organ Treatment.**—Ghedini submitted 25 animals to organ therapy, continued for two or three months. Each of the animals became weak and emaciated. He, therefore, warns that while the benefits of organ treatment have been established beyond question for certain cases, its continuous application is liable to prove injurious.

126. **Brain Organ Therapy.**—Fatal doses of strychnin were administered to animals, and while the controls all died those protected with cephalopin were saved. This is the oil extracted from brain substance, and it displays the action of an efficient organ extract. Twelve cases of epilepsy were apparently much benefited by injection of a few c.c. on alternate days. One patient has had no recurrence of her daily seizures since she began taking 2 c.c. of the cephalopin on alternate days, a month ago. It has also proved effective in other nervous affections.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES OF THE GALL BLADDER AND BILE DUCTS, INCLUDING GALLSTONES. By A. W. Mayo Robson, F.R.C.S., Hunterian Professor of Surgery and Pathology, 1897, 1899 and 1903. Assisted by J. F. Dodson, M.S. (Lond.), F.R.C.S., Lately Resident Surgeon to the General Infirmary at Leeds. Third Edition. Cloth. Pp. 485. Price, $4.25 net. New York: William Wood & Co. 1904.

A REPORT ON TWO CASES OF A PECULIAR FORM OF HAND INFECTION, Due to an Organism Resembling the Koch-Weeks Bacillus. By John R. McDill, M.D., and Wm. B. Wherry, M.D., Department of the Interior. Bureau of Government Laboratories. Biological Laboratory. Paper. Pp. 20. Manila: Bureau of Public Printing. 1904.

INDEX CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY. Part 6. (Authors F to Fynney). By Ch. Wardell Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Veterinary Inspector, Bureau of Animal Industry. Paper. Pp. 510. Washington: Government Printing Office. 1904.

IROQUOIS THEATER FIRE, Chicago, Illinois, Wednesday Afternoon, Dec. 30, 1903. List of Victims. Paper. Pp. 12. Compiled by John E. Traeger, Coroner, Cook County, Illinois, Chicago. Chicago: Henry O. Shepard Co. 1904.

REPORT ON HEMORRHAGIC SEPTICEMIA IN ANIMALS IN THE PHILIPPINE ISLANDS. By Paul G. Woolley, M.D., and J. W. Jobling, M.D. Paper. Pp. 21. Manila: Bureau of Public Printing. 1904.

THE COMPLETE ANAS OF THOMAS JEFFERSON. Edited by Franklin B. Sawvel, Ph.D. Cloth. Pp. 283. Price, $1.50. New York: The Round Table Press. 1903.

ANNUAL REPORT OF JOHN E. TRAEGER, Coroner of the County of Cook, Illinois. For the Year 1903. Paper. Pp. 13. Chicago: H. O. Shepard Co.

REPORT OF THE TRUSTEES OF THE NEWBERRY LIBRARY for the Year 1903. Paper. Pp. 28. Chicago. 1904.